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CLINICAL MEDICINE and SURGERY

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AUSTIN FLINT, M.D., LL.D.

UNIV. OF MICH.

Vol. 40 JUNE, 1933 No. 6

CLINICAL MEDICINE AND SURGERY

Dr. Austin Flint

("The American Laennec")

WHETHER it was the result of heredity, environment or tradition, Austin Flint was the fourth generation in a family of physicians, his grandfather having also been Dr. Austin Flint, and his son, Austin Junior, kept up the succession and added to the family fame.

The subject of this sketch was born in Petersham, Mass., October 20, 1812, studied at Amherst and Cambridge, graduated in Medicine from Harvard, and immediately thereafter began his professional career in Boston.

But the land of the Sacred Cod did not hold him long. He moved on into the newer and more active western country at Buffalo, New York, where he founded and became editor of the *Buffalo Medical Journal,* and was also one of the founders of the Buffalo Medical College, where he taught from 1836 to 1843.

With his natural and acquired gifts as a writer and teacher, and opportunities to display them, it was not long before his fame began to spread, and in 1844 he was called to be professor of the theory and practice of medicine in Rush Medical College, where he stayed for two years and then went to fill the same chair in the University of Louisville, where he was associated with Dr. S. D. Gross for four years, after which he became professor of clinical medicine in the New Orleans School of Medicine (1859 to 1861) and, later (1861), professor of the principles and practice of medicine at Bellevue Hospital, New York, which chair he filled until his death, from apoplexy, March 13, 1886. During this time he was also professor of pathology and practical medicine at Long Island College Hospital (1861 to 1868).

Dr. Flint began keeping clinical records and writing about them in 1833, and his publications ultimately filled 16,922 folio pages.

His success as a medical practitioner and consultant was always great, and was especially conspicuous after he went to New York. Few, if any, men contributed so much to the development of physical diagnosis in the United States. He did more than anyone else to popularize the use of the binaural stethoscope, and his trained imagination foresaw some of our modern instruments of precision in this field. He was the first to use the terms, cavernous and broncho-vesicular respiration, and it was Gross who spoke of him as "The American Laennec."

In 1883, Dr. Flint was elected president of the American Medical Association, assuming office in 1884, on which occasion he gave evidence of the hospitality of his mind to new ideas by selecting as his subject "The Common Cold" and declaring his conviction that the various maladies grouped under this title are of bacterial origin and are infectious. The germ theory of disease was only twenty years old at that time, and, while Flint had accepted it as soon as it was announced, there were still so many men in the medical profession who had not done so that his speech precipitated a lively fight.

Among his more noteworthy writings were: "Compendium of Percussion and Auscultation" (1865); "On Disease of the Heart"

(1852); "Principles and Practice of Medicine" (1866), which ran to seven editions; and "On Phthysis" (1875), in which he defended Laennec's thesis, that phthysis depends on tubercles, against the reactionary writings of Niemeyer.

Tall, handsome and of commanding presence, with a powerful and cultured voice, he was one of the most successful and inspiring medical lecturers of his time. His industry was indefatigable; his judgment keen and certain; his mind free from bias and his fame and accomplishments were in proportion to all these.

We can well agree with the British writer, in the *Lancet*, who in 1887, said: "America may well be proud of having produced a man whose gifts of genius have done so much to advance Medicine."

The manner of your speaking is fully as important as the matter, as more people have ears to be tickled than understanding to judge.—Lord Chesterfield.

CANCER CAUSED BY BACTERIA

FROM time to time, the suggestion has been made that cancer is or may be caused by a bacterial infection, but, hitherto, this has, so far as we are aware, never been demonstrated.

Now Glover and Engle report (*Public Health Reports*, March 31, 1933) that, some time ago, a spore-bearing microorganism was isolated, on a special medium, from a microscopically proved carcinoma of a human breast. On November 5, 1932, a culture of this organism was injected into the breast region of an adult female guinea-pig, following which the general signs and symptoms of a metastasizing cancer developed and, on February 28, 1933, the animal was sacrificed and an autopsy showed that the tumor which had developed was a malignant adenoma, with metastases in the lymph nodes, omentum and kidneys. The original organism was recovered from the tissues of this tumor.

This report does not, of course, prove that all cancers are caused by bacterial infection, but it is the first soundly scientific piece of work along this line with which we are familiar and deserves the thoughtful attention of research workers and physicians.

Much remains to be done before this idea can be generally accepted without question, but, if further reports confirm these findings, it requires no very vivid imagination to picture the revolutionary changes which it will make in our conception of the prophylaxis and treatment of one of the greatest scourges of humanity.

Success is won by taking the risk of failure.

DYNAMIC PATHOLOGY AND THERAPEUTICS

SOMEONE has cynically declared that language was invented to conceal thought. Along that line, it might seem probable that the nomenclature of disease was invented to keep people from thinking about the *nature* of disease. When most physicians have made a diagnosis of diabetes or parkinsonism or what you will—pasted a label on the side of a moving train—their studies stop. Few are interested in knowing *why* a disease originates or what may be its life history, as a continuing, dynamic process.

In a brief, but potent, article in this issue, Dr. Podolsky has made the presently-accepted, static pathology look a bit absurd. Life is dynamic. The condition of the body, emotions and mind are never the same, nor in identically the same relations, for two consecutive minutes. Infections are not the result of bacteria, but of a *relationship* between the bacteria and their host. Toxemias do not depend upon poisonous substances in the body, but upon the manner and extent of the *upset* which the poisons produce in the electrochemical balance of the body's cells and fluids, which changes from hour to hour.

When a man is ill, we take his pulse, temperature and respiratory rate every two or three hours. How many ever think of testing the blood pressure, the basal metabolism, the urine and the electro-cardiographic reactions at similar frequent intervals? And yet these latter factors vary as widely and as rapidly as the former. Nothing in a man's body stops moving and changing until that body is a corpse. Then the pathologists go to work upon it!

J. E. R. McDonagh, of London, seems to be doing most to make those, who have the pro-

fessional enthusiasm and strength of purpose to read him, think of patients as living, dynamic organisms, rather than as collections of specimens, to be placed in glass jars and on microscopic slides, with nice, neat labels attached to them.

A few men—very few, because few have had the vision to be interested—have been trying to find some way to make objective measurements of the electrochemical status or potential of the living body. Some have hatched weird mind-chickens. One man, Ellis, whose book is reviewed in this issue, seems to have grasped certain large conceptions in a practical way, but his work is only at its beginning.

When we can study the living body as one coordinated mechanism, rather than as a group of more or less diseased organs, we should be ready to apply our therapy along similar lines. That does not necessarily mean that we must find new animal, vegetable, mineral, physical and psychic remedies, but that we should learn more about the dynamic effect of those we are using and about the body in which they are used, so that we can, not only select the right remedy and apply it to the right place, but also give it at the *right time;* for the day is coming when we must apply the time dimension to our conceptions of disease, as well as to all other things in life.

Everything creative is done by somebody, and not by everybody.—Dr. Virgil Jordan.

DILAUDID

THE need for a powerful narcotic and pain reliever, free from the disadvantages of morphine, has long been recognized, and chemists have been searching for it.

Ten years ago, German researchers synthesized a substance which is, chemically, dihydromorphinone hydrochloride and is called Dilaudid, the root of the word being derived from laudanum. This drug is from three to five times as powerful an analgesic as morphine (the hypodermic dose is from 1/64 to 1/32 grain—1 to 2 mgm.—and the oral dose is 1/24 to 1/16 grain—2.5 to 4 mgm.) and is said to be much less constipating than the alkaloid it is intended to replace, somewhat more toxic, in equal doses, and relatively free from habit-forming qualities. It has been in use in Europe for several years.

This drug was brought to the attention of American physicians chiefly by an article by Dr. Walter C. Alvarez, which appeared in the *Proceedings of the Staff Meetings of the Mayo Clinic* for August 17, 1932, in which the author, after clinical experience, confirmed the claims made as to the analgesic power of Dilaudid, and also as to its relative freedom from constipating effect, undue toxicity and habit-forming properties. As a producer of sleep, he considers it less efficient than morphine; it is less likely to cause excitement; and somewhat more prone to produce nausea. Large doses sometimes cause slowing of the respiration. When given by mouth, its superiority to morphine, given by the same route, is especially noteworthy.

There seems to be a reasonable degree of unanimity of opinion as to the desirable clinical properties of Dilaudid, among those who have used it, but there is still some controversy regarding its habit-forming potentialities, and this should be settled as promptly as possible.

In this connection, it must be remembered that many people have taken morphine over long periods, for the relief of pain, without becoming habitues, and that most of the "morphine fiends" did *not* begin using the drug for pain, but as a means of relief, through its euphoric effects, from the undue pressures of life, resulting from their psychic instability. In other words, drug habituation, like alcoholism, results from a defect in the habitue, rather than from the innate properties of the drug taken.

Patients who are in such severe pain as to require narcotics for its relief, are generally suffering from a serious and progressive disease, and it is not surprising to find that increasing doses may be needed to secure the relief which is desirable or necessary. If the dosage is left more or less at the sufferer's discretion, it would be remarkable if a larger dose than is advisable or safe were not sometimes taken. Neither of these conditions, however, can properly be considered as habituation if, when the pain is ameliorated, the use of the drug can be stopped without upsetting the patient's equilibrium.

In a recent personal communication, after six months of further observation, Dr. Alvarez expresses his continuing conviction that Dilaudid is safer than morphine and much more serviceable, in some ways. So far, he has not heard of a case of habituation in the United States.

The simplest way to discover its habit-forming properties would seem to be to experiment with morphine habitues and see if they will accept Dilaudid in place of their regular "tipple." They will accept heroin in this way, but will not accept codeine.

It would seem that here we have a drug which merits sincere and unbiased trial by the medical profession, not with the idea of finding out how bad it is, but of determining how *good* it is. If it is only one-third or one-half as dangerous as morphine, it will be a valuable addition to our armamentarium.

SUPPORTIVE TREATMENT IN HAY-FEVER

THE modern treatment for hay-fever, which produces gratifying results in a high percentage of cases, is desentization with increasing doses of suitable pollen extracts determined by skin tests. If this treatment is carried out every year for five or six years, using one's full quota of intelligence in its application, many patients seem to be permanently relieved of the condition, completely or partially.

But, as we are treating whole human beings, rather than merely unstable nasal mucuous membranes, the highest degree of success depends upon putting each patient in the best possible physical condition; and this means studying much more than his skin tests, and doing a number of things besides inject antigens.

Vitamin deficiencies, particularly of A, B, and D, are now rather generally recognized as playing a part in allergic manifestations; and the amounts and balance of calcium and phosphorus in the blood are of importance.

Extra-nasal, as well as nasopharyngeal foci of infection should be cleared up as fully as possible, and if there is any suspicion that a patient is sensitive to certain foods, he should be tested and, if necessary, desensitized.

In fact, a hay-fever patient must have a *complete* physical examination, as well as careful study of his well-taken history, if best results are to be obtained. He may be underweight and anemic or overweight and flabby; his diet may be inadequate or ill-balanced; his way of living may need reorganization.

Many of these patients need additions of vitamins A, B, and D, and also the addition of calcium, phosphorous, iron and copper to their diets. This can now be done, with ease and accuracy, by means of the newer pharmaceutical preparations now available; but these things are not self-prescribing, and must be used with real intelligence.

Hay-fever does not kill people, but the distress it produces is so great that the sufferers are glad to make liberal payments, in gratitude and cash, to the physician who can give them substantial relief.

COLYONES

EVERY physician is now familiar with hormones, and the progressive and successful ones are studying about them and using them in their daily practice. They are the stimulators—the arousers.

But sometimes the endocrine organs need brakes, rather than accelerators, and we are finding ways of applying them, in some cases, by means of the much-less-well-known colyones—sometimes called chalones or catechins—the restrainers of endocrine activities.

The hormone of the corpus luteum, that of the mammary gland and another from the anterior pituitary lobe diminish the action of the female sex hormones; the pancreas keeps certain adrenal functions, especially those of the medulla, in check; A. H. Thompson, of London, says that an anti-growth colyone is produced by the parathyroids.

With such a start, who shall say that we may not discover an anti-thyroid colyone, for use in hyperthyroidism, and others which will enable us to regulate the activities of all the endocrines with almost mathematical precision? These matters deserve study and should be watched by all forward-looking physicians.

LEADING ARTICLES

The A.B.C. of Cancer

I. Lesions of the Skin

By Charles F. Geschickter, M.D., Baltimore, Maryland
Surgical Pathological Laboratory, Department of Surgery, Johns Hopkins Hospital and University.

IN THE diagnosis and treatment of lesions of the skin, it is essential to differentiate the benign from the malignant lesion; if benign, to decide whether removal is necessary and, if malignant, to determine whether irradiation or surgery is indicated. The correct decision depends upon an evaluation of the patient's story, the findings at examination and the interpretation of what is revealed by the microscope.

In deciding upon the removal of benign lesions, it is important to single out areas of irritation and overgrowth which precede cancer (the socalled precancerous dermatoses) and the congenital defects which, because of location or injury, are subject to malignant change. The precancerous areas of irritation are often confused with chronic infections caused by the organisms of syphilis, tuberculosis or the fungus group.

Squamous Cell Warts or Senile Keratoses

These lesions occur chiefly on the forehead, cheeks, neck or back of the hands (surfaces exposed to sunlight), in aged patients, and are common among farmers. They are scaly and rough; yellow to gray-black; usually multiple and, if the crust is removed, weep or ulcerate. The keratotic area may be seen in a warty stage or as a shallow ulcer.

Under the microscope this type of keratosis shows: Increase in the amount of keratin deposit on the skin surface; thickening of the epidermis due to proliferation of squamous cells; and a downgrowth of the epithelial pegs into the corium or subepidermal tissue. This downgrowth, with a tendency for the basal cell row to disappear about the downward projection, is the neoplastic or precancerous portion of the lesion and furnishes the microscopic evidence of malignant change.

The neglected squamous-cell wart may advance to hopeless cancer and, when showing marks of irritation or regression, should be removed by the knife, with a definite margin of normal skin, if not yielding to preliminary cleansing with soap and water.

Besides senile keratosis, as a forerunner of squamous cell cancer, chemical irritants may produce similar lesions. These occur in workers exposed to tar, pitch, paraffin, lubricating oils and arsenic. Similar areas of precancerous irritation may follow after several exposures to x-rays or radium or in the scar of any serious burn. It is important to realize that the proper treatment of these lesions means cancer prevention.

Basal-Cell Warts or Seborrheic Keratoses

These lesions occur chiefly in elderly patients, usually on the skin of the trunk covered by clothing or on the face about the nose and eyes. It is difficult, clinically, to distinguish them from squamous-cell warts and they may resemble the pigmented mole. Diagnosis is chiefly by location and with the microscope.

The miscroscope discloses an epidermal thickening, composed of keratin in basal-cell warts, a proliferation of small basal cells with prominent nuclei, displacing the normal squamous cells and usually enclosing cystic areas. In the benign lesions, an intact lower row of basal cells limits the growth to the corium beneath.

The neglected basal-cell lesion may advance to the stage of mutilating cancer, although metastases do not occur in the ordinary types. If the lesion is seen early, it may yield to cleansing with soap and water, followed by alcohol and vaseline. If on the nose, eye or upper lip, the more refractory types may be cured by irradiation. In other areas complete excision is recommended.

Squamous-Cell Cancer

The more curable cases of squamous-cell cancer arise secondary to the precancerous dermatoses (Figure 1). They usually are classed, microscopically, as Grades I or II. The more malignant grades of squamous-cell cancer are prone to appear suddenly, in the form of a small ulcer, and are classed, microscopically, as Grades III or IV. The curabil-

Fig. 1.—(Path. No. 39792) Squamous-cell Cancer, Developing in Multiple Foci in Keratoses upon the Face of a Farmer.

ity depends upon the promptness of treatment and the microscopic classification.

Squamous-cell cancer of Grades I or II shows a transformation one step beyond the pseudo-malignant hyperplasia seen in chronic irritation and precancerous lesions. Usually the remains of keratoses are visible, and the colonies of malignant cells are seen below, breaking through the basal-cell boundary.

Grade III and IV squamous-cell cancer shows a cuboidal or transitional cell predominating, which is half way between the squamous cell and the basal cell. Many mitotic figures are present and keratin is not produced.

It is always important to recognize all grades of squamous-cell carcinoma, as opposed to basal-cell cancer. Squamous-cell cancer metastasizes and, in favorable locations, is best treated by excision or irradiation, followed by preoperative irradiation and resection of the regional lymph nodes. On the other hand, basal-cell lesions do not metastasize, yield readily to irradiation by x-rays or radium and seldom warrant radical surgery.

Basal-Cell Cancer or Rodent Ulcer

Basal-cell cancer may supervene in seborrheic keratoses, in the subepidermal basal-cell nodule or arise de novo as a primary malignant ulcer. Usually this form of tumor appears on the face or on the body, in the same localities frequented by seborrheic keratoses (Figure 2).

Microscopically, the development of malignancy in the benign basal-cell lesion is shown by the budding of new islands of tightly packed basal cells in the neighborhood of the original lesion, the ulceration of the overlying epidermis and penetration of the tumor tissue into the corium and subcutaneous tissue.

In the fully developed basal-cell cancer, the cells vary from spindle to oval in shape, grow in small clusters, with intervening areas of fibrous tissue, and have a conspicuous nucleus

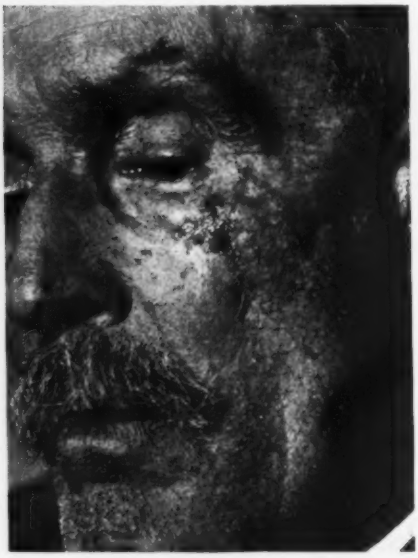

Fig. 2.—(Path. No. 25610) Basal-cell Cancer about the Lower Eyelid, Developing in Seborrheic Keratoses.

with many small hyperchromatic forms and mitotic figures.

Irradiation vs. Surgery in Skin Cancer

In all squamous and basal lesions of the skin, the choice between irradiation and surgery must be made. In basal-cell warts or basal-cell cancer, superficial x-rays (of low-voltage type—140 kilovolts at 4 milliamperes —unfiltered or filtered through 3 millimeters of aluminum at 30 centimeters distance) or the application of radium, in the form of a plaque or radon (filtered through 1 millimeter of brass at one centimeter distance), is highly successful in many cases. If the lesions are small and, because of location, the diagnosis is in doubt, complete excision, with a margin of normal skin, with the knife, cautery or endotherm, is preferable, since it permits microscopic confirmation of the diagnosis. On the face, the scar of surgery is often less noticeable than the scar of irradiation.

Squamous-cell carcinoma is radio-sensitive to a degree which is best determined by microscopic study, taking into consideration the locality affected. For this reason, the type of excision followed by microscopic study, recommended for basal-cell lesions in small or doubtful tumors, is best employed. On the skin and on the anterior two-thirds of the tongue and lower lip, squamous-cell carcinoma may be treated by excision or by the interstitial application of radium or radon. If the cancer is graded I or II, deep x-ray treatment only may be applied to the neighboring lymph nodes, if these are not grossly involved. If the neighboring lymph nodes are involved or if the cancer grades III or IV, the irradiation of the regional nodes is to be followed by resection.

Dermoids and Sebaceous Cysts

Ectodermal inclusions below the normal epidermis give rise to cystic tumors of a common type. These cysts may be the result of retention and dilatation of preexisting glands or congenital displacements and may or may not have an opening on the surface. Such an opening is usually plugged with sebaceous material.

The lining of the cyst, under the microscope, resembles a normal epidermal surface, with keratin, squamous cells and a basal-cell layer; but is prone to undergo proliferation, increased keratin production and secondary degeneration due to infection.

In three to five percent of the benign dermoid cysts, malignant change occurs in the cells forming the lining. Usually such cancer is of the squamous-cell type. The dermoid cyst should be completely excised, rather than shelled out.

Pigmented Moles

Moles are a very common form of pigmented skin blemish. The benign pigmented mole is a congenital lesion, flat, raised or pedunculated, with a deep or light brown color, and often with a scaly surface. They may occur anywhere on the body.

Microscopically, the tumor area in the benign mole is a subepidermal nodule, composed of cells of a rounded, oval or spindle shape, grouped in nests demarcated by young connective tissue. Combined nuclear forms, giant cells and scattered melanin pigment are common features.

Fig. 3.—(Path. No. 40726) Malignant Pigmented Mole, Surrounded by Daughter Colonies. There are Metastases in the Axillary Glands.

With malignant change, the pigmented area of the mole enlarges, ulcerates, daughter colonies appear in the neighborhood and the regional lymph nodes become involved by metastases (Figure 3).

Under the microscope, the malignant change in the pigmented mole is evidenced by the enlargement of the cells and marked changes in the nuclei, including frequent mitotic figures, hyperchromatosis and pyknosis.

The treatment of the pigmented mole is excision with a normal skin margin, while the lesion is still benign, when it is an area subject to irritation. Radical excision is employed for the malignant mole, but is usually futile. The tumors are not radio-sensitive.

Angiomatous tumors of the blood or lymph vessels and neurofibromas involving the nerve sheaths may present themselves as affections of the skin. These tumors are derived from soft-part structures in the corium or subcutaneous tissue and will be discussed in connection with other soft-part tumors in the third paper of this series.

HOW TO OBTAIN MORE AUTOPSIES

A high percentage of autopsies can be obtained by merely stimulating enough interest in the doctors concerned to ask for them and establishing a close bond between the doctor and relatives during the patient's illness. The cooperation of the undertakers can readily be obtained by courteous treatment and assistance in making embalming easy.—Dr. D. Schuyler Pulford, *of Woodland, Calif., in* Ann. Intern. Med., *April*, 1932.

Pollen Extracts

By Marjorie B. Moore, Ph.D., North Chicago, Ill.

ONLY twenty-two years have elapsed since the modern method of treatment of hay-fever patients by repeated injections of pollen extract was described by Noon[1] and Freeman[2]. Hay-fever, however, had been known for many years and various kinds of treatment had been tried.

The first definite description of hay-fever was that by Bostock, in 1819, although Botallus (1565) and Binningerus (1673) described forms of seasonal catarrh which may have been hay-fever. Bostock believed the symptoms to be due to external irritants, such as dust, but did not suspect the pollens. Blackley, a physician of Manchester, England, was the first definitely to establish atmospheric pollen as the cause of hay-fever (1873). He tested on himself the pollens of nearly a hundred species of grasses and flowers, using skin tests as well as inhalation. Moreover, he made atmospheric studies to determine the amount of pollen in the air, and was able to correlate the pollen counts at various times with his own symptoms.

After the discovery of the causative agent, various methods were tried for the specific treatment of hay-fever. Dunbar[3] considered that the disease was due to a toxin in the pollen, and prepared an antitoxin for treatment. The first recorded efforts at active immunization were by Curtis[4], in 1900, and by Ingals[5], in 1902. Both of these used oral administration of tinctures or fluidextracts of the flowering tops of the plants. The initial dose was small and following doses were gradually increased. Scheppegrell[6] immunized fall hay-fever patients by the inhalation of ragweed pollen into the nostrils.

Since its introduction by Noon and Freeman, the method of desensitization—or hyposensitization, as preferred by some—by means of gradually increasing hypodermic doses of an extract of the pollen or pollens to which the patient is sensitive, has increased in popularity until it is now employed by almost all the physicians who specialize in the treatment of allergic diseases. Many general practitioners, likewise are obtaining a large percentage of successful results by the use of this method in the treatment of their hay-fever patients. By treatment in the early years of hay-fever, patients are saved from the asthma which so often occurs in untreated cases.

Diagnosis

For successful treatment, it is first necessary that a correct and complete diagnosis be made. This has been emphasized in most of the recent papers relating to the practical treatment of hay-fever. Three methods of diagnosis are in common use for detecting the pollens to which a patient is hypersensitive: the cutaneous or scratch test; the intracutaneous test; and the ophthalmic test. In addition to these, inhalant tests are sometimes made on hay-fever patients and patch tests on those with suspected allergic dermatitis. In testing for food allergens, another method, that of elimination diets, has been developed by Rowe. Complete diagnosis for other allergens, as well as for pollens, should always be made on the hay-fever patient, in order to detect any other factors which may cause complications and render the treatment less successful.

For cutaneous and intracutaneous testing and for treatment, it is customary to use extracts of the pollen. For ophthalmic, and occasionally for cutaneous testing, the whole dried pollen may be used. Some workers have advocated the use of finely-ground whole pollen suspensions for treatment. However, the accepted method today is that involving the injection of pollen extracts, usually subcutaneously, but sometimes intracutaneously.

Pollen extracts to be used in the diagnosis and treatment of pollen allergy must fulfill at least three requirements: The pollens used must be properly dried and from known botanical sources, unmixed with extraneous pollens (most important in diagnosis); the extracts must be potent; and they must be relatively stable. A fourth, perhaps non-essential but very important requisite, is that the extract shall produce no irritation and be practically painless upon injection.

Preparation of Extracts

The active substance in pollen is very readily soluble in water or other aqueous solvents and requires a high concentration of alcohol to cause its precipitation. On this point, even those who hold such opposing views as to the chemical nature of the allergen, as Black[7] and Stull, Cooke and Chobot[8], can agree. Black believes that the allergic activity of pollens is due to a specific polysaccharide, very soluble in water. Stull, Cooke and Chobot prepared a water-soluble protein, which they believe represents the true allergen.

It thus appears that any aqueous extracting fluid should satisfy the requirement of giving a potent extract, provided the dry pollens used are of proper quality. The problem then becomes that of the selection of a menstruum for extraction which will most

efficiently preserve the potency and, at the same time, cause the least pain and inconvenience to the patient.

Many of the earlier workers did not appreciate the ready solubility of the active substance in pollens. Noon and Freeman used repeated freezing and thawing in distilled water to prepare their extracts. They also boiled the extracts to sterilize them, and probably thereby destroyed much of the activity. Lowdermilk[9] extracted by grinding the pollen with sand and physiologic salt solution. Hitchens[10] ground the pollen with distilled water, in a ball-mill, for twenty-four hours.

Soon after the pioneers had shown that effective extracts could be prepared in aqueous solutions, it began to be noticed that such extracts were subject to deterioration. For instance, filtration for sterility was soon adopted, instead of the boiling method of Noon and Freeman, and extracts were kept cool. Clock[11], using the complement fixation test, showed that extracts containing 2/3 glycerol and 1/3 saturated salt solution were much more stable than those prepared with salt solution alone. Coca[12] proposed the use of an isotonic buffered salt solution, which is largely used at present.

The pollen extracts now available commercially vary widely in selection of the extracting menstruum, in packaging and in maximum doses recommended for the average patient. The solutions used by some of the leading firms in this field for the preparation of pollen extracts may be listed: (1) glycerin 50%—buffered saline; (2) glycerin 67%—buffered saline; (3) glycerin 60%—sodium chloride solution (1%); (4) glycerin 67%—sodium chloride solution (saturated); (5) glycerin 48%—sodium chloride (5%); (6) physiologic sodium chloride—alcohol (14%); (7) buffered saline—0.4% phenol; (8) 0.5% phenol solution; (9) dextrose solution (5%)—0.5% phenol.

All these extracting solutions probably give extracts of good potency when freshly prepared, but their rate of deterioration may vary within wide limits. It would be desirable to have a comparison of the potency and stability of all the various types of extracts in common use at the present time. However, this cannot be done until a method of testing is found which can be definitely shown to agree with the clinical activity. Of course it is possible to prepare fresh extracts of fairly uniform potency by using the same weight of pure pollen in the same volume of extracting fluid; but another method is needed for a quantitative study of their deterioration.

Standardization

A number of tests for potency of pollen extracts have been proposed, but none as yet has been generally adopted. The ideal method of standardization, of course, would involve having always on hand a considerable number of pollen-sensitive patients, who would be willing to undergo testing at any time. As such a method is not practicable, we must rely upon other methods—chemical or pharmacologic. Determinations of total nitrogen are of little or no value. A large percentage of the nitrogen of pollen extracts is immunologically inert, and as the proteins are changed the total nitrogen does not change. Recently, Cooke and Stull[13] have made a study of the correlation between determinations of protein nitrogen and the clinical activity of pollen extracts and have recommended such determinations as a practical basis of standardization. If their work on the identification of the active substance in pollen extracts as a water-soluble protein is confirmed, and if the determination is found to be sufficiently delicate, this may prove to be the method of choice. If not, a biologic method may, perhaps, be found satisfactory. Clock used the complement fixation test in his study of the relative stability of pollen extracts in different solvents. The results of this test, however, did not show complete correlation with clinical activity. Cromwell and Moore[14] have described a method for quantitative application of Ramsdell's trypan blue skin test in pollen-sensitized rabbits. This method has also been used for a study of the deterioration of pollen extracts. It appears to bear a close correlation to skin tests on hay-fever patients and to be almost as delicate in detecting small quantities of the active substance. Some rabbits react specifically to a solution representing about one hundred-millionth of a gram of ragweed pollen, while patients may react to a solution representing one billionth of a gram. Further work is necessary to confirm the parallelism of the two tests, however.

Until agreement is reached upon a satisfactory test for determining potency and hence rate of deterioration of pollen extracts, we can rely only upon the consensus of clinicians. The opinion at the present time appears to be that extracts containing a large proportion of glycerol are considerably more stable than those in aqueous saline solutions, with or without the addition of alcohol. The extract in isotonic dextrose solution is being marketed for the first time this year, after a number of clinicians used it experimentally the preceding year. Careful comparisons[15], using quantitative intradermal tests, both on laboratory animals and on hay-fever patients, showed that the extracts in dextrose solution were as potent and as stable as those in glycero-saline solution, even when subjected to the severe test of preservation for a year at incubator temperature. Results of treatment with the new extracts were also very satisfactory.

Therapeutic Use

Many patients object to injection of glycerinated pollen extracts, because of the pain which they experience; hence, many physicians have chosen to use the relatively less stable aqueous saline extracts, because of their greater acceptability to patients. Others have preferred to use glycerinated extracts, because of their greater stability, trusting to good clinical results to keep the patient satisfied and willing to return for treatments. By the use of extracts in the dextrose menstruum, it appears that this choice need no longer be made. The extracts are, at the same time, as stable as glycerinated extracts and much more acceptable to the patient.

For intradermal testing, it has always been necessary to use aqueous extracts, even for physicians who are accustomed to use glycerinated extracts for subcutaneous injection in treatment. The glycerol appears to exert no deleterious effect on the tissues when given subcutaneously, but when given intracutaneously large wheals are formed, which subside only after several days. This reaction practically prohibits the use of extracts containing a considerable percentage of glycerol for intracutaneous testing and makes them highly undesirable for intracutaneous treatment. Some clinics prepare concentrated pollen extracts in glycerinated solution and make dilutions for intracutaneous use with aqueous saline. Such a procedure may be satisfactory unless it becomes necessary to use quite concentrated extracts. However, as the intracutaneous test is usually resorted to for patients with relatively unreactive skins, it may frequently happen that the more concentrated extracts are needed.

Conclusions

1.—The two most important variables in pollen extracts, whether made commercially or prepared in the physician's own laboratory from good quality dried pollens appear to be: (1) stability and (2) pain caused by injections.

2.—In the past, glycerinated extracts have been preferred for stability and aqueous saline extracts for comparative painlessness of injection.

3.—Extracts prepared in isotonic dextrose solution have the advantage of being both stable and practically painless upon injection, subcutaneously or intracutaneously.

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BUILDING A CATHEDRAL

An inquiring traveler came upon three men engaged in cutting stone.

"What are you doing?" he asked of the first.

"Cutting stone," answered the man.

"What are you doing?" he inquired of the second.

"I am earning five dollars a day," the man replied.

"And what are you doing?" the third man was asked.

"I am building a cathedral," was the answer.

There's a moral in this story for the idler in medicine—he's the man who is just "cutting stone"; there's a moral in it for the man engaged in the practice of medicine who looks on the work in which he is engaged as merely a "business"—he's the man who is "earning five dollars a day"; there's a moral in it for the earnest physician who believes that he is engaged in the noble work of a scientific profession, whose first and lasting aim is to render helpful service to all mankind—he is "building a cathedral."

Irradiated Solutions in Inflammations

(A Preliminary Report)

By J. A. Dungan, M.D., Greeley, Colo.

SEVERAL years ago I conceived the idea that a remedy for inflammations, acute or chronic, might be developed from solutions of selected salts of calcium, potassium, sodium, magnesium and iron[1]. Irradiation of these solutions with the three more common therapeutic rays was a later idea.

An intravenous preparation would be required, as rapidity of action would be a very important element. Severe inflammatory states of the body would not have time to respond to mouth medication, as the delays incident to absorption would be considerable, granted that the remedy selected was the proper one[2]. There would also be the disturbing factor of chemical changes taking place in the medicines after they had reached the stomach, bowels and blood, which might alter them so that the final products would not be suitable, or even active, therapeutically.

This proposed intravenous preparation must fulfill the following requirements:

1.—It must be a fluid able to pass through a No. 27 Luer needle.

2.—It must be homologous with the human blood; and I found that, to meet this need, the salts of manganese, bismuth and lithium had to be added.

3.—It must not generate gas in the blood, and it must be approximately of the same pH as that of the blood—7.32.

4.—It must be able to be completely sterilized, and when incorporated in sterile containers must remain indefinitely active and without precipitate.

5.—It must have active antiseptic properties, over and above what would be found in the blood in disease states, though such activity might arise later on, and indirectly, by its having stimulated phagocytic processes in the blood stream. All of these needs I found to be satisfied in solutions made of the above-named salts, sterilized in distilled water.*

During my early experiments to normalize the fluids and tissues of the body, I soon noted the outstanding therapeutic powers of these sterile, isotonic solutions and, believing that many hitherto poorly understood disease entities might be explained upon the theory of a cell-deficiency[3], and so be able to be resolved and cured, I have, for the past twelve years, made steady use of these intravenous injections.

One conclusion that was early and seemingly inevitable was that a great many diseases are inflammatory in their origin and course. Of necessity, this had a beginning in cell-chemistry, and so, *a priori*, a proper cell-salt solution should supply to the blood the rational remedy. This theory has proved, through the years, to be true. These solutions both normalize the cell-chemistry and go farther, in that they provide for the killing of germs or prevent their propagative activities in the blood stream and tissues. In inflammatory conditions of great violence, I have hundreds of times seen them, in a very short time, "put the fire out" as if "it had been flooded with water."

At first, all the elements were incorporated in one solution; but as time went on and it developed that part were more useful in acute inflammations and others indicated in chronic inflammations, two solutions, each containing a number of the salts, were made, and these I now call, respectively, Number One and Number Two. In ninety-five percent of the acute inflammatory conditions, operations can be avoided by the prompt use of these solutions. The comparatively few cases in which they may not obviate operations are usually in inflammations of small, cul-de-sac-like organs, which, poorly supplied with blood, are apt to rupture early or become gangrenous before the patient is seen by his physician.

Some irradiating of medicinal products has been done but, so far as my knowledge goes, I first irradiated intravenous solutions with the ultraviolet, violet and infrared rays. The procedure has enormously enhanced their value, and I trace much of their power to the combination.

Out of 65 acute appendicitis cases, mostly diagnosed without laboratory tests, I have treated, and more than 80 chronic cases, I shall here report only one typical case; and of 86 cholecystitis cases, some with calculi, I shall mention details of but 3 cases. Of all the gall-bladder cases I treated, but one came to operation, and that terminated fatally, owing to ether pneumonia. Of both the acute and chronic appendicitis cases, only 3 were operated upon, with one fatality.

Within the past twelve years I have injected

*It is to be remembered that these irradiated solutions are still in process of development and are constantly being studied with the view to their improvement. Until a fixed and definite formula is decided upon, it would, in my opinion, be a mistake to give details of the solutions being used, because many might be tempted to prepare them extemporaneously without the care which is necessary, and then, after obtaining unsatisfactory results, to blame the method.

Meantime, the solutions in their present form, upon which this report is based, are being prepared by the Intra-Products Co., of Denver, Colo. Those desiring to obtain a sufficient quantity for clinical trial please address J. A. Dungan, M.D., 1539 Tenth Ave., Greeley, Colo.

these solutions more than 4,500 times and have witnessed no severe reaction. In this time I have treated a great many different diseases, acute and chronic, characterized by inflammation, and in all of them that condition was the guiding indication. Thus it was possible to use the injection as the principal remedy in conditions so widely diverse, etiologically, as pneumonia, typhoid-fever, septicemia, skin diseases, inoperable internal cancer, Bright's disease, diabetes mellitus, peritonitis, cholecystitis, appendicitis, erysipelas, mastoiditis, otitis, panophthalmitis, gonorrhea, pharyngitis, laryngitis, rhinitis, cystitis, influenza, colitis and peptic and duodenal ulcers.

Redness of the face and a flat, salt taste in the mouth may be noted in several minutes to several hours following the injection. Sterilization of the skin over the vein selected for the injection should be complete. The Luer needle, No. 27, should be sterile, as also the syringe, and the solution should be injected slowly, not to exceed 1 cc. to each half-minute. The dose of the Number One solution is from 2 to 5 cc., according to the age of the patient and the amount of the inflammation and fever. The dose of the Number Two solution will range from 2 to 10 cc., the amount being determined by the same circumstances.

Case Reports

Appendicitis

Case 1.—R.C., male, aged 15, temperature 102° F.

Two days previous to admission to my hospital, he had vomited. He had colicky pains, which later centered in McBurney's point. The leukocyte count was 18,000. I put him to bed, with ice over the appendix, and ordered starvation and rest in bed. I gave 5 cc. of Number One and, an hour later, the same amount of Number Two, and kept this plan up for three days. On the third day he had milk every three hours, and the following days his usual food, and made an uneventful recovery.

Cholecystitis

Case 2.—Mr. J. L., age 46, had had "gall-stones" for several years, with attacks increasing in frequency and severity. I found him suffering excrutiating pains, with vomiting, which failed to give relief; temperature, 100° F.; epigastric pains radiated to the right shoulder-blade and down the right arm, having started after a meal of rich food. The pain was of great intensity, with intermissions, each returning cramp being of greater severity than the preceding one.

I intended to give the man 20 cc. of the Number One solution, but when I had injected 10 cc. he wanted to vomit and I withdrew the needle. Shortly afterward he seemed to be relieved of his pains. Since then (now two years) he has done full work on his farm and has had no recurrence of his gall-bladder pain.

Case 3.—Mrs. M. C., age 45, seamstress, came to me on the third day following her latest attack of "gall-stones." These had, for several years, been growing worse and she had been advised by several surgeons to have her gall-bladder operated upon. She had decided to do this and came here for the operation. I proposed to her the injection treatment, to see if a cure might be possible without operation, and she agreed to the plan.

Beginning December 8, 1931, and from then on, at four-day intervals, to May, I gave her diathermy through the liver and alternate injections of solutions of Number One and Number Two, with the result that, since then, she has had no return of her trouble.

Case 4.—Mrs. J. A. McA., multipara, age 40, said she had had gall-stones for ten years. The attacks had at first come at monthly intervals, but lately were coming about every two weeks. Gradually she had grown worse, but had repeatedly refused operation.

I saw her first in June, 1932. I treated her with diathermy through the liver, high soda-water enemas and injections of solutions Numbers One and Two, at four-day intervals, until August 6, when she considered herself cured and, with her family, moved to Kansas. On February 16, 1933, I received a letter from her husband, saying that his wife was entirely well and had no return of her trouble.

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1539 Tenth Avenue.

SIGNIFICANCE IN ART

There are not many artists who mix brains with their paint. They paint a picture and call it "A Man Standing" or "A Woman Paring Apples," and I say, "What of it?" That it is well painted is not enough for me, nor is still life of a pallid lemon leaning against a banana enough, however beautiful the technic. The idea or subject matter of most paintings is banal. Lead me out into the mystery of larger thoughts. Few artists there are who can take the commonplace and glorify it with thought-compelling and poetic significance.
—Arthur Young.

The Physiology of Conception

By Henry Schmitz, A.M., M.D., LL.D., F.A.C.S., F.A.C.R., Chicago, Ill.

Prof. of Gynecology, Loyola University School of Medicine.

THE discussion on periods of physiologic fertility and physiologic sterility, by Ogino and Knaus, has excited a good deal of controversy. It is not possible to explain these controversial views without a concept of the physiology of fecundation and the behavior of menstrual life in women.

The physiology of conception and fertilization should consider: (1) the time of ovulation; (2) the speed of migration of the ovum from the ovary to the uterine cavity; (3) the duration of life or impregnability of the ovum; (4) the speed of immigration of the spermatozoa from the vaginal vault to the peritoneal cavity; (5) the duration of virility or fecundity of the spermatozoa; (6) the periodicity of the menstrual flow; and (7) the interrelation of the lives of ova and spermatozoa to the periods of physiologic fertility and sterility.

It is generally accepted that the average periodicity is 28 days or one lunar month. This period is calculated from the first day of the onset of a menstruation to the first day of onset of the next following menstruation. The events leading to menstruation are: (1) the maturing of a primary or primitive follicle, the development of the ovum contained in the follicle to maturity to become capable of being impregnated, which is concurrent with the development of the Graafian follicle; (2) the rupture of the follicle with the dehiscence of the ripe ovum; (3) the immediate formation of the yellow body, the persistence of the yellow body if the ovum becomes impregnated and pregnancy is started, or its degeneration if the ovum failed to pair with the male sex cell and died. The latter event is signally heralded by the onset of menstruation and is due to a shedding of the menstrual decidua which had been prepared for the reception of an impregnated ovum. Impregnation did not take place and the functional part of the inner lining of the uterus became detached, just as the membranes are in labor. Menstruation is a labor en miniature—the funeral obsequies of a disappointed ovum. All these processes are connected with the fate of the ovum. Hence it is logically and physiologically correct to time these facts chronologically from the day of the onset of the last menstruation, which is also the day of the onset of the new cycle of ovulation. If Ogino counts backwards from the first day of the onset of the next menses, which day is rarely predictable, he uses a method at variance with all medical thought and invites needless confusion. The day of the onset of the last menstruation is a historical fact. Ogino states ovulation occurs from the 16th to 12th day before the onset of the next menstruation in a 28-day cycle, which is exactly from the 12th to 16th days of the 28-day cycle, calculated from the beginning of the last menstruation.

Ovulation

The series of investigations made to determine the time of occurrence of ovulation and the methods used in these investigations are as follows: In 1911, Fränkel examined, macroscopically, all ovaries during laparotomies and, from the state of the corpora lutea, the day of ovulation was set as the 18th day in a 28-day cycle. In 1913, Schröder and R. Meyer and Ruge examined, microscopically, the corpora lutea and the endometrium, and placed the time of ovulation on the 15th day of a 28-day cycle. In 1923, Ogino published the results of similar investigations and concluded that the time of ovulation was the 13th and 14th days. In 1928, Newell et al. recovered live ova from the uterine tubes during laparotomies and, from these and the microscopic examination of the coexisting corpora lutea, the time of ovulation was determined as the 13th, 14th, and (the latest) the morning of the 15th day. These researches supplied the missing link in the chain of the physiologic processes concerned with ovulation and the period of viability of the ovum. In 1929, Knaus, by testing the reaction of contractility of the uterine muscle to intravenous injections of pituitary extract (contraction will occur during the follicle stage and will be inhibited during the corpus luteum stage) established thereby the presence or absence of a yellow body. Thus the time of ovulation was determined to be the 14th to 16th days. Therefore, the mid-interval between two periods of menstruation is the day of greatest frequency of ovulation.

In 1930, Knaus stated that ovulation, in a 26-day cycle, occurs on the 11th to 12th days; in a 28-day cycle, on the 13th to 14th days; in a 30-day cycle, on the 15th to 16th days; and in a 33-day cycle, on the 17th to 18th days, while R. Meyer and Ruge placed ovulation, in a 21-day cycle, on the 10th to 11th days.

Schroeder, in a recent paper, said that the time period of the follicle stage, in an irregular menstrual period, was constant and that maturation of the follicle was completed at about the 15th day. If menstruation occurred too soon, then the period of prime of the yellow body was shortened. The shortest

interval between the day of onset of two normal menstruations could be 16 days, the corpus luteum having had only one day of activity. Ogino, however, claims that the time of ovulation was always from the 12th to 14th day *before* the onset of the next menstruation and may occur on the 24th day; i.e., the 4th day of a 28-day menstrual cycle; that is, premature or extraordinary ovulations are possible.

Ovulation may also occur earlier or later than the mid-interval in a 28-day cycle. Wittenbeck employed the same tests as Knaus and allowed a fluctuation in the time of occurrence of ovulation of 2 to 3 days, either way, considering these as normal. He reported 90 observations in the human female, consisting of the same tests and corroborated by the same immediate laparotomies and examinations of the yellow bodies as those of Knaus. The reactions concurred with those of Knaus in 30 cases. In 2 cases the reaction occurred on the 11th post-menstrual day and in another case on the 13th day. At laparotomy, recent corpora lutea were found. In another case the reaction was found on the 22nd day and, during laparotomy, a recent corpus luteum was found. In 12 cases the contractility of the uterine muscle was found during the first half of the menstrual cycle, yet, during operation, yellow bodies were not seen. Eight other cases, each one operated upon on the same day of the cycle, had inhibition of uterine contractions in the absence of corpora lutea. These cases had pathologic changes, such as diseased tubes, and another three cases had small cysts of the ovaries. Wittenbeck concludes that the controlling influence of the corpus luteum is not absolute.

The Duration of Migration and Impregnability of the Ovum

The time of migration of the ovum from the ovary to the fallopian tubes has been estimated to be three days, and to the uterine cavity to be 8 days. An impregnated ovum becomes implanted in the uterine decidua within 14 days. Knaus states that, if implantation does not occur shortly before the expected onset of menstruation, then menstruation will take place, because the yellow body began to degenerate. If implantation occurred, then the yellow body persists and gestation is started. If impregnation occurred too late and menstruation started, then the fecundated ovum is aborted. Therefore, the last day of successful impregnation is the 17th day, so the impregnated ovum might become imbedded by the 27th day. Further, the 11th day is the earliest time for conception. This claim is based on the assumption that ovulation, cohabitation and impregnation must almost coincide in time of occurrence, due to the limited vitality of the human sex cells. Therefore, only those cohabitations will terminate in pregnancy which take place on the 11th to the 17th days, inclusive, of the cycle. This corresponds to an ovulation period from the 12th to 18th day. All cohabitations before the 11th and after the 17th day of the cycle must remain sterile. Ogino is of the opinion that sufficient proofs are not available to justify a final verdict to stamp the post-menstrual period, up to and including the 10th day, as physiologically sterile, since regularity in the periodicity of the cycle is a relative term. Siegel, Jager, Dickinson and Guchteneere, among others, are of the same opinion as Ogino.

The Duration of Immigration and Virility of the Spermatozoa

The period of immigration of the spermatozoa, from the vaginal fornix to the tubal ampulla, is generally placed at 24 to 36 hours. This is also the shortest time between cohabitation and fecundation of the ovum. The duration of viability of the spermatozoa, in a strongly acid secretion of the vagina, is less than one hour; in a weakly acid secretion, about 2 days; in the uterine cavity, 2 to 8 days; in the tubes, about 3 days; and in the peritoneal cavity less than 24 hours, due to phagocytosis (Hoehne and Behne, 1914). Viability and virility do not coincide, as viability of a spermatozoon may not mean fertilability.

The Periodicity of Menstruation

The periodic cycle of menstruation is not regular. It is more often shortened. King kept records of 17 women, observing 523 cycles. A 27-day periodicity was observed 19 times and furnished the largest frequency. Foster recorded 380 cycles, in 56 women. A 28-day cycle occurred 45 times; it was shortened 225 times and lengthened 110 times. Newell reported the periodicity of 260 cycles, in 50 women. The 28-day cycle was seen 50 times; it was shortened 182 times and lengthened 69 times. The percentage in 640 periods was: the 28-day cycle occurred 95 times, or 8.6 percent; menstruation occurred too soon 407 times, or 63.5 percent; and it was delayed 179 times, or 27.9 percent.

Discussion

Conception depends: (1) on the time of ovulation and on the duration of impregnability of the ovum; (2) on the speed of immigration and the duration of virility of the spermatozoa. In a 28-day cycle, the time of ovulation, including the physiologic fluctuation, is 5 days, extending from the 11th to 18th days. The duration of impregnability is one day, according to Knaus, but may be 6 days, according to the generally accepted findings, especially those of Newell et al. The latter did not find viable ova after the 20th

day. The period of absolute sterility, in a 28-day cycle, therefore begins on the 21st day.

Artificial or provocative ovulation exists and is accepted by Hoehne, Behne, Guchteneere, Ogino, Schroeder and Siegel, among others. Wittenbeck observed ovulations on the 9th and 11th days. If the period of virility of the spermatozoa is two days, and if it is stretched to 3 days, then cohabitation practiced on the 9th day may lead to conception. If premature ovulation takes place (and it cannot be denied), then the period from the cessation of the flow up to and including the 8th day is one of possible fertility, though conception is less likely to occur. If menstruation occurs too soon, then the period of fertility occurs earlier; if menstruation is delayed, then the maximal time of conception will begin and end later, according to Ogino and Knaus. If the onset of the next menstruation could be predicted, then the periods of greatest fecundity and maximal sterility could be definitely determined.

Conclusions

The period of maximum fecundity is from the 11th to the 20th day of a 28-day menstrual cycle. The period of absolute sterility is from the 21st to the 28th day of a 28-day cycle. A period of sterility in the post-menstrual period, before the 10th day, may be possible but is improbable.

Until these controversial points have been settled, it would be advisable to consider the 8 days before the expected menstruation as a period of physiologic sterility, in women in whom the onset of menstruation is known.

Further investigations of a large amount of factual material are required to determine the possibility of a post-menstrual period of sterility.

25 E. Washington St.

The A.B.C. of Vitamin Therapy*

(Part II)

By A. Stanley Cook, Ph.D., Montreal, Can.

Vitamin B_2

VITAMIN B_2 is the water-soluble, heat-stable factor necessary for growth and the prevention of dermatitis in rats and for the prevention of pellagra in man. Little is known of the chemistry of this vitamin, as yet, and there is considerable evidence to indicate that it is a complex of several distinct food factors.

Pellagra, according to Wheeler, "is one of the leading causes of death and disability throughout much of the rural South." Goldberger et al, of the U. S. Public Health Service, have shown that pellagra can be prevented at will, by the addition of certain foods to the diet. It can also be produced at will, in persons never before involved, by the removal of these foods from their diet. That dietary deficiency is the primary etiologic factor in pellagra, is now generally conceded, although it is not quite so well established that it is the only factor involved. That the pellagra-preventive factor is identical with the heat-stable substance necessary for rat growth and prevention of dermatitis, is highly probable and supported by much indirect evidence.

The Public Health Service has tested a variety of food stuffs and lists them in three classes:

1.—Those which prevent pellagra when added in sufficient quantity to an otherwise pellagra-producing diet, such as milk (fresh, canned, evaporated and dried), buttermilk, fresh beef, canned corned beef, liver, canned salmon, canned haddock, tomatoes, turnip greens, canned English peas.

2.—Those which are less effective, but valuable as contributory sources of the vitamin, such as dried beans and peas, eggs, canned spinach, green cabbage and canned string beans.

3.—Those which are ineffective, regardless of the quantity used, such as cornmeal, wheat flour, rye flour, oatmeal, molasses, cane syrup, sweet potatoes, mature onions, carrots, rutabagas, salt pork, lard, cottonseed oil, butter and gelatin.

Dried yeast is an outstandingly good source of this food factor.

Plimmer states, as a simple guide, that if the diet contains sufficient animal protein foods, enough of the pellagra-preventive factor will be provided. Unfortunately it is this class of food which is most expensive and difficult to provide for in the poor communities of the cotton belt. As Wheeler points out, the control of endemic pellagra is more a socio-economic problem than a medical one.

Dietary restriction owing to disease, food fads, alcoholism, etc., often leads to pellagra. Early recognition of the condition and prompt treatment are important, since ultimate cure is sometimes impossible in the later stages of the disease.

*Continued from the May issue, pages 247-49.

Vitamin C

Water-soluble C, the antiscorbutic vitamin, is present in the citrus fruits, lemons and oranges. These constitute its best source. Other fruits, vegetables and milk are also good sources, especially when eaten in the raw state. Domestic cooking causes a partial and sometimes almost complete loss of antiscorbutic potency, due to oxidation, but modern anaerobic canning and preserving methods retain almost if not all of the original potency. Prolonged storage and drying also result in destruction of this vitamin.

Early in 1932, Rygh and Rygh, Norwegian scientists, working at Uppsala, announced the isolation and synthesis of the antiscorbutic vitamin. They believe it to be a derivative of the opium alkaloid, narcotine, which they found to be present in oranges.

Other workers, however, have failed to confirm this highly ingenious piece of work and, indeed, the most recent findings are directly contradictory. This later evidence, derived from three different sources—C. G. King et al, of Pittsburgh; Zilva, of London; and Szent Györgyi, of Hungary—points to vitamin C being identical with hexuronic acid.* Hexuronic acid is related, chemically, to the simple sugars and, like them, exhibits strong reducing properties. It has been isolated from suprarenal cortex† as well as from vegetable sources.

Florid scurvy, once the scourge of armies and navies, has now been practically eliminated, by the general recognition of the necessity for an adequate supply of fresh fruits and vegetables. This was effected in the British Navy, in 1795, by the issue of 1 ounce of lemon juice per man per day.

Among various animal species, a wide variation in susceptibility to scurvy exists. Guinea-pigs and monkeys are sensitive; whereas rats, rabbits and fowls are insensitive. Guinea-pig scurvy, which is considered to be essentially identical with human scurvy, is characterized by loss of weight, soreness of joints, hemorrhages around rib junctions and knee joints, soreness and hyperemia of the gums, leading to looseness of teeth, separation of epiphyses from long tubular or medullated bones, changes of bone marrow and sometimes hemorrhages into the skin.

According to Findlay, the essential lesion is a swelling and degeneration of the capillary endothelium, resulting in stagnation of the blood in the capillaries. The degeneration of the endothelial cells affects the production of intercellular substance and causes edema and hemorrhage. The stagnation of the blood causes deficient oxygenation of the tissues. Wolbach and Howe consider the change to be a more general one, affecting in different degree connective tissue of various parts of the body, the teeth being one of the earliest structures to be affected.

Hojer has made an extensive study of tooth changes in guinea-pigs suffering from varying degrees of vitamin C deficiency and, on his findings, has based a method of assay for the vitamin. Hanké and others believe that these changes, by impairing the normal structure and nutrition of the dental tissues, are the direct cause of caries and other dental diseases. Chronic scurvy in guinea-pigs leads to a heightened susceptibility to infection, miscarriage, still births and congenital scurvy in the young.

Scurvy may exist in latent or subacute form, which, although not exhibiting the typical picture of scurvy, yet responds to treatment with antiscorbutics. Hess describes such cases of latent scurvy in infants, in whom symptoms of restlessness, irritability, evident discomfort and retardation of growth disappeared after orange juice was added to the diet.

In older children and adults, dental caries is the outstanding sign of latent scurvy. Hanké et al have been very successful in arresting caries and curing some kinds of pyorrhea by modifying the patients' diets to make them rich in vitamin C. These effects of partial vitamin C deficiency are of more significance in general practice than those of acute deficiency.

C Requirement

The international unit for vitamin C is the antiscorbutic activity of 0.1 cc. of lemon juice. Since an adult man requires the vitamin C equivalent of 1 ounce (30 cc.) of lemon juice daily for complete protection from scurvy, his daily requirement can be stated as 300 international units, or about 4 to 5 international units per kilogram of body weight, daily. The estimated requirement for an 8 to 10 kg. child is 15 cc. of lemon juice, or 150 international units (15 to 19 international units per kg. of body weight). This amount of vitamin C (150 international units) will be contained in approximately ½ to 1 ounce of fresh green spinach, green cabbage, strawberries or fresh tomato, pineapple or peach juice; 1 to 2 ounces of canned tomato juice or canned green peas; 2 to 4 ounces of apples, bananas, boiled cabbage or potatoes; 1½ to 2 pints of milk (variable). Dried fruits and preserved lime juice have little or no value.

Vitamin D

Fat-soluble vitamin D is the substance responsible for the antirachitic activity of cod-

*There are a number of possible isomeric hexuronic acids. For this particular compound Szent-György has suggested the name "ascorbic acid."

†Raw suprarenal cortex (ox) is the most potent antiscorbic known, having three times the activity of fresh orange juice.

liver oil, viosterol, cod-liver oil concentrates, irradiated foods and sunshine. Vitamin D is formed from ergosterol (itself devoid of antirachitic properties) by the action of ultraviolet rays. The reaction appears to be one of intramolecular rearrangement, since vitamin D and its precursor are isomeric; that is, they have the same chemical composition, $C_{27}H_{43}O$, but different internal structures.

Nor is vitamin D the only substance formed when ergosterol is irradiated. The product seems to be a mixture of several closely related compounds, which, with the exception of the vitamin, are physiologically inactive. Out of this complex reaction product, several groups of workers in various countries have isolated highly potent, crystalline fractions. The most recent of these, calciferol, was prepared by Askew, Bourdillon et al at the National Institute for Medical Research, England, and is thought to be the pure vitamin. It has the enormous potency of 40 million international units per gram—twice as great as any previously recorded value—and in excessive doses is highly toxic. This would indicate that the toxicity is inherent in the vitamin and not due to toxic byproducts, as has been thought by some workers.

The rôle of vitamin D appears to be that of regulator of calcium and phosphorus metabolism. The mechanism of its action and its relationship to parathyroid function is, however, not at all well understood.

One effect of the vitamin is to increase the retention of calcium and phosphorus. Rachitic children have low calcium and phosphorus balances, even though the diet may be rich in these elements. Their feces are high in both minerals. Administration of cod-liver oil results in greatly increased storage, less calcium and phosphorus in the feces and more in the urine. Since the average diet is barely adequate in calcium, the importance of effective utilization is evident.

A second well known effect of vitamin D is to increase the concentration of calcium and phosphorus in the blood. In rickets the blood phosphorus is low, and in infantile tetany the blood calcium sinks to a very low level. Therapeutic doses of vitamin D restore the normal concentration in both cases. While this may be due to an increased absorption of these minerals from the gut, it has been found that, even when the diet is lacking in calcium, the vitamin is able to control the blood calcium by withdrawing it from the skeleton. This point brings out the mobile nature of skeletal bone. It is continually being broken down, reorganized and built up again, and thus may serve as a reservoir for these important minerals.

Deficiency of vitamin D in the growing child leads to rickets, a condition in which lime salt deposition fails to keep pace with the growth of the bones. In rickets the blood Ca x P product is low—30 or under; whereas, in normal children, this product is about 50. Howland and Kramer believe that this relationship is of more importance in normal bone calcification than is the individual concentration of either calcium or phosphorus. Park, however, points out that the Ca x P product of rickets varies according to the rate of growth of the individual. In infants under one year, one may find well marked rickets associated with a Ca x P product of over 45; whereas normal adults have a Ca x P product of only 25 to 40. This is due to the fact that the inorganic phosphorus of the blood serum decreases with increasing age (from 5 ± 0.5 mg. percent to 2 to 3.7 mg. percent); whereas the calcium remains more or less constant (10 ± 1 mg. percent).

In agreement with this conception of rickets is the fact that the more rapidly growing bones of the skeleton are those which are involved first and most severely.

Varying degrees of vitamin D deficiency manifest themselves in varying degrees of defective calcification. A slightly suboptimal lime-salt deposition may become manifest with some variation in diet, decreased exposure to sunlight, or complicating disease.

In the adult, deficiency of vitamin D expresses itself in osteomalacia and other bone disorders.

The work of Mellanby and others, under the auspices of the British Medical Research Council, indicates that vitamin D has an important influence on the structure and arrangement of teeth and they have come to the conclusion, after extensive experiments on children in institutions, that "the incidence and rate of progress of caries in teeth, either fully or nearly fully calcified, can be considerably retarded by the addition of fat-soluble vitamins to the normal diet."

D Requirement

Since most foodstuffs, including milk, are deficient in vitamin D, and since the amount of direct exposure to the activating rays of sunlight is limited by latitude, atmospheric conditions, habits of life, clothing, etc., it has now become a universal custom to supplement the diet of infants and children with some form of vitamin D. In general, pediatricians favor cod-liver oil or cod-liver oil with viosterol-10D, providing the oil is well tolerated and unless a heavy dosage is indicated, as is sometimes the case with premature and negro infants. In these exceptions mentioned above viosterol 250D is of value. The standard optimum dosage of cod-liver oil recommended by the Council on Pharmacy and Chemistry of the A.M.A. for the prevention and cure of rickets is 3 teaspoonfuls daily, for the average infant at 3 months of age.

Cod-liver oil is definitely favored over plain viosterol, and has the advantage of ensuring an adequate intake of vitamin A, as well as vitamin D, and thus, as Poulsson says, of promoting "the proper development of the body and the raising of vitality equally against bronchitis and pneumonia, which are of bad prognosis in rickets." There is also a probability that vitamins A and D exert a synergistic effect, since cod-liver oil has been found much more effective for the prevention and cure of rickets than viosterol, in doses containing the same number of rat units of vitamin D.

In view of the preceding, it seems likely that the new liquid cod-liver oil concentrates will find favor with pediatricians, especially for the type of case requiring a larger dose of vitamin D than can be conveniently given by the medium of cod-liver oil.

Vitamin D is also indicated for mothers during the latter part of pregnancy and during lactation, when the drain of calcium and phosphorus from the maternal organism is great. Administration of vitamin D ensures proper utilization of the supply of these minerals from the diet. Otherwise, there may be a withdrawal of calcium and phosphorus from the maternal body, with resultant dental caries.

Hypervitaminosis

Vitamin D is the only vitamin which is known to cause toxic effects when excessive doses are given. Opinions differ as to the extent of the margin of safety and, since the various species vary greatly in their sensitivity to overdosage, it is not possible to settle this point definitely by experiment on animals. There is no reason to believe, however, that there is any danger in the use of any of the accepted vitamin D preparations, in the dosages recommended in "New and Non-Official Remedies." It should be remembered, however, that viosterol 250D is a powerful drug —100 times the vitamin D potency of high-grade cod-liver oil—and its administration should be at all times under close supervision of the physician.

In experimental animals, hypervitaminosis D is characterized by loss of appetite, rapid loss of weight, severe emaciation and decrease in vigor, diarrhea, shaggy, greasy hair, and rapidly culminates in death. The blood calcium and phosphorus may be increased 25 to 50 percent. Necropsy shows extensive calcification of the blood vessels and vital organs.

Vitamin E

Vitamin E is a fat-soluble vitamin, found principally in the green leaves and seeds of plants. It is essential for the nutrition of the rat, since deficiency of it in the diet results in sterility of both sexes. While this vitamin is of great interest to the research worker in the field of nutrition, evidence is quite lacking, as yet, that it possesses any importance in human nutrition.

781 William St.

THE TRUE GENTLEMAN

Politeness has been defined as love in trifles. Courtesy is said to be love in little things. And the one secret of politeness is to love. Love cannot behave itself unseemly. You can put the most untutored persons into the highest society, and if they have a reservoir of love in their hearts, they will not behave themselves unseemly. They simply cannot do it. Carlyle said of Robert Burns that there was no truer gentleman in Europe than the ploughman-poet. It was because he loved everything—the mouse, and the daisy and all the things, great and small, that God had made. So with this simple passport he could mingle with any society, and enter courts and palaces from his little cottage on the banks of the Ayr. You know the meaning of the word "gentleman." It means gentle man—a man who does things gently with love. And that is the whole art and mystery of it. The gentle man cannot, in the nature of things, do an ungentle and ungentlemanly thing. The ungentle soul—the inconsiderate, unsympathetic nature—cannot do anything else. "Love doth not behave itself unseemly."—Henry Drummond.

SOUL SICKNESS

It will not take the young doctor many years of practice before he will learn that there is, not only a physical suffering, but also a soul suffering; and he will never be a great physician unless he can minister to the sufferings of that invisible and spiritual counterpart, as well as to those of the physical man.—Dr. S. Adolphus Knopf.

PHYSICAL THERAPY AND RADIOLOGY

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The Economics of Distant Radiation Therapy by Radium and X-Rays

THE use of higher voltages for x-ray treatments will not contribute to an increase in depth dose, but causes a change in distribution of intensities, due to the Compton effect, and a change in the primary effects on the tissues, which more nearly equal those of gamma rays.

With 700 kilovolts; 60-cm. focal-skin distance; a 5-mm. copper filter; and a 10-cm. field of entrance, a threshold skin dose is obtained with 550 milliampere minutes, given in 4 daily fractions. Hence, with a 10 milliampere load, a field requires an exposure of 55 minutes and two fields 110 minutes or about 2 hours. In a working day of six hours, three patients can be treated by crossfire through two fields. That means that, on 300 working days yearly, 900 patients can be treated.

There are, on an average, 300,000 cancer patients a year in the United States and about 90,000 would need tele-irradiations. Hence 100 transformers should be installed, in 100 centers distributed according to population; or the transformer could be used in two shifts of 6 hours each daily, distributed in 50 centers. The cost of such installations would be $75,000 each, which means a total of $3,750,000, including a transformer and building for 50 such radiation therapy centers so distributed throughout the United States as to render adequate facilities to each patient requiring such treatment. It requires two technicians at $1,200 yearly to give the treatments, which, at 5 percent interest, represents a capital of $2,400,000 for 50 centers. The total expense to the nation of the roentgen-ray equipment would be $6,150,000.

Using 4 grams of radium element, at 15 cm. focal-skin distance, and using two fields for crossfiring, it would take 30 hours to treat one patient with the fraction method, as the total dose per field is 60 gram-hours. Employing the Mayer and Chevel method, two patients could be treated within 30 hours. Assuming further that the treatments would be given continuously, day and night and every day in the year, then 285 patients (in round numbers 300 patients) could be treated yearly with tele-curie therapy. The initial expense for 4 grams radium, with accessories, is $250,000. Three technicians, in 8 hour shifts, would be required continuously, at $1,200 yearly salary, which, at 5 percent, represents an endowment of $75,000. Thus tele-curie therapy, for the treatment of 300 patients a year, requires a capital outlay of $250,000 plus $75,000, or a total of $325,000.

However, 90,000 patients must probably be treated and, therefore, 300 radium centers, each with 4 grams of the element, would be required; thus 300 times $325,000 gives a total of $97,500,000 as the expense to treat every patient adequately with tele-curie therapy.

At the present economic status, such an expense is prohibitive and it also would be an impossibility to obtain 1,200 grams of radium,

as the present output of the Belgian company is about 30 Gm. yearly and the facilities of the Canadian mines, opened recently, are not yet estimated.

A method for the adequate treatment of carcinomas of the large body cavities and the bones must be found. At the same time, the treatment should be made as economical and practical as present-day developments will permit. The solution lies in the development of ultrashort wave length roentgen-ray therapy (which acts much like gamma rays), with apparatus that can furnish 1,000,000 or more volts and tubes that can carry such voltage.

H. S.

Hydrotherapy: A Cheap and Efficient Remedy

By Frank T. Woodbury, M.D., Philadelphia, Pa.

I was amazed to read recently of a fatal case of hyperpyrexia, in which the temperature reached 109° F., where cold bathing was not even suggested as a possible method of treatment.[1]

A reference to the various standard works on medicine exhibits, in the majority of instances, a total ignoring of the valuable remedial benefits of heat and cold, or at least but vague and apologetic references. It is only when the special works on hydrotherapy or physical medicine are consulted, as the comprehensive writings of Kellogg, Ziemssen or Solis-Cohen, that one finds the matter adequately presented. Indeed, Hippocrates is far more copious and helpful than Osler.

It would be interesting to know how many medical schools have adequate courses in the effects of heat and cold in their physiologic curriculums, and how many give scientific instruction in heat and cold as a remedy.

It is undoubtedly unthought-of by many who consider themselves well versed in therapeutics, or at least is considered to be a method solely connected with hygiene and comfort or with fever therapy, and to be given only in institutions with hydrotherapeutic departments especially equipped for the purpose, or at the various curative watering places and springs.

Indications

But hydrotherapy has many applications which can be given in the ward, the home or even in the office. When the newborn patient has a cerebral hemorrhage, or the school girl a case of menorrhagia, or the patient with renal disease an attack of hematuria, or the tuberculosis patient a hemoptysis, do you think first, if at all, of the efficacy of cold water as a hemostatic? If the patient is delirious or has insomnia or is having a chill or a fever, would you consider giving a hot or a cold application and, if so, how would you do it? Can you properly prescribe for a case of pleurisy, lumbago, neuritis, arthritis, a contusion, a sprain, or an extensive burn the appropriate hydrotherapeutic treatment? Are morning sickness, phlebitis, gall-stone colic, intusssusception, acute intestinal obstruction and constipation amenable to hot or cold water? In how many instances can you avoid applying to the druggist or sending the patient to a hospital by the use of hydrotherapy?

An affirmative answer to these questions is, not only a confirmation of your therapeutic resourcefulness, but an index of your ability to give your patient excellent treatment and save him the expense of druggist's and hospital bills and thus insure the payment of your own fee and make a grateful patient.

The works of John Bell, J. Harvey Kellogg, Solomon Solis-Cohen, Guy Hinsdale, Simon Baruch, Rebekah Wright and others, all in English, are replete with a wealth of information on this subject.

Pyretotherapy

The work of von Jauregg,[2] in curing neurosyphilis by inoculating the patient with *Plasmodium vivax*, which was followed by others, employing the organisms of rat-bite fever and relapsing fever, and also by parenteral injections of chemical substances, attracted the attention of the profession to the value of fever as a means of cure. At once physicians discovered that they had had in their possession, since 1891 when d'Arsonval made his first contribution on the subject (so immediately followed by the announcement of Nikola Tesla), a method of causing fever by the use of both electric currents and electromagnetic fields. The first was called diathermy and the second autocondensation. But even this did not evoke the interest it should have done, inasmuch as matters dragged along until a nationally-known electric company, as an accident, discovered again that electromagnetic fields, in this case from a large thermionic tube, could cause fever, and heat, to boiling, organic and saline solutions. They advertised the matter spectacu-

larly by making some impressive machines which were called radiotherms and putting them out for trial in various of the large hospitals and institutions of research.

Hot Baths

Let us not be confused by names nor by apparatus, however remarkable or however efficient. Let us look at what is being done to the patient. His body is being heated to a fever degree of temperature, kept at that degree for a determined time and then allowed to cool off.

From time beyond record, hot baths, of water, vapor and air, have been used empirically to make people sweat and to cure many ailments. The hot baths of Kusatsu Springs, in Japan,[3] have long been popular (since 1688) and now have scientific confirmation for their effects. The temperature of the bather is raised with each immersion, which lasts up to a maximum of six minutes, to at least 102° F. and often to 104° F., which does not abate for about half an hour subsequently, and which can be continued by wrapping him up well. The temperature of the water at Kusatsu ranges between 113° and 128° F.

In 1883, Phillips[4] demonstrated upon himself the rise of temperature from hot baths. Later Hill and Flack,[5] Fox,[6] Sonntag,[7] Schamberg[8] and others made experimental contributions to this phenomenon. Finally Mehrtens and Pouppirt[9] were able to obtain sustained high temperatures by means of a bath between 105° and 110° F., maintained until the rectal temperature (taken continuously by a thermocouple) reached a point within 1.5° F. of the temperature desired, when the temperature of the bath water was gradually reduced to that of the patient. The immersion lasted one hour and the fever could be sustained by removing the patient to a hot pack for another hour and giving him hot drinks.

It will thus be seen that hot and cold water, so universally available and so cheap, constitute one of our most valuable and scientifically correct remedies.

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1930 Chestnut Street.

NOTES AND ABSTRACTS

Radium Therapy in Carcinoma of the Lip*

RADIUM therapy stands preeminently the method of choice in carcinoma of the lip. In presenting data on 252 cases treated between 1921 and 1929, I am dividing them into four groups, as follows: (1) Lesions involving not more than half of the lip, with no palpable glandular enlargement on the first examination; (2) lesions involving more than half of the lip or extending out of sight inside the buccal cavity, but with no palpable glandular enlargement on first examination; (3) cases with glandular enlargement; (4) cases in which radium and surgery were combined or which were previously treated elsewhere.

Group 1 covers 151 cases in which the average age of incidence of the disease was 56.8 years. Of the 137 cases suitable for analysis, 128 were living and well two years or longer after treatment and were considered definitely cured. Nine had died of carcinoma. Of 82 of these patients treated 5 years before, 67 were living and well.

Group 2 covers 13 patients, of which only four were living and well two years or more after treatment. Eight were dead of carcinoma and one of intercurrent disease. Three were still living five years after treatment.

Group 3 includes 36 patients, of which only two were well four years after treatment. The primary lesion in a majority of the 34 patients now dead was healed with radium and the metastases held in abeyance for many months.

Group 4 includes 52 cases, which are so

*J.A.M.A., 100:388, Feb. 11, 1933.

varied as not to be suitable for statistical analysis.

Of the 164 patients in groups 1 and 2, only 12 received more than one application of radium. In the routine treatment, radiation was given by radon bulbs, one or more bulbs containing from 400 to 750 millicuries each, filtered by 1.5 mm. of brass and 6 mm. of felt being used. One or more bulbs were used as foci of radiation, according to the area covered by the lesion, and the dosage varied from 250 millicurie hours in the smallest lesion to 1350 millicurie hours in the largest one. The average dose was from 500 to 750 millicurie hours, and this was given at a single application. In nearly all cases the lip was perfectly healed without the slightest scar or defect within four months. In the more extensive cases, in which there had been widespread destruction of the tissue, there was a remarkable tendency toward restoration of the normal contour, leaving only small depressions—never any drawing or contraction of the lip, such as follows operation.

Drawing conclusions from our results: For group 2 cases, I would advise radium to the primary lesion and radical dissection of the glands of the neck. In this class metastasis has taken place in nearly every case, although not palpable. For group 3 cases I would advise irradiation of the primary lesion and removal of the glands surgically, if still small and moveable enough to make operation feasible. If the glands are fixed and infiltrated, so that removal is impossible, implantation of radium needles and deep radium or high-voltage roentgen therapy offers alleviation and a remote possibility of a cure.

EDMUND KELLY, M.D.

Baltimore, Md.

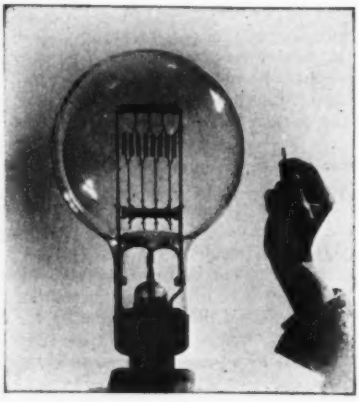
Look for THE LEISURE HOUR among the advertising pages at the back.

Physical Therapy for Asthmatics

IN established asthma, not only is there the problem of a distended and rigid thorax, but there is tenseness of the respiratory muscles which seems to overflow to the muscles of the neck, face, abdomen and even limbs. Physical exercises must commence with the practice of relaxation, without which no amount of physical therapy can be of benefit.—DR. A. H. DOUTHWAITE, in *Brit. J. Physic. Med.*, Dec., 1931.

Send for your copy of "Serums and Vaccines." Your patients need this information.

NEWS NOTES



Freaks of "Nature" in the Lamp Family

ABOUT fifty years ago, when incandescent lamps were in their infancy, the variety of shapes and sizes could be numbered on the fingers of one hand. Today, after a half-century of artificial illumination with incandescent light sources, there are some 3,000 different kinds of lamps. Many of these have unusual applications and are manufactured only on special order, hence people seldom see these "freaks" of the incandescent lamp family.

The smallest lamp in commercial use today, consumes only one-fifth of one watt. With a consumption so small it could burn all day long for a year at a cost of only 10 cents, based on a country-wide average rate per kilowatt hour. These tiny "specks" of light are used in doctor's instruments for exploring the insides of human beings, such as the sinus regions of the head.

At the other extremity in the family of freak lamps is the 10,000-watt lamp, which has a glass bulb larger than a man's head.

With an actual bulb diameter of 12 inches, this lamp is 128 times larger than the "grain of wheat" lamp and consumes 50,000 times the wattage. The cost of operating such a lamp continuously for a year, at the same average kilowatt-hour rate, would be $5,232.

The 10-kilowatt lamp is used principally in motion picture studios, but also has applications in airport lighting and frequently is used for special lighting occasions where the spectacular is desired.

STOMATOLOGY

OFFICIAL ORGAN OF THE AMERICAN SOCIETY OF STOMATOLOGISTS

ASSOCIATE EDITOR: ALFRED J. ASGIS, *Sc.B., M.A., D.D.S.*

Tic Douloureux

Cooperation of the Physician and the Stomatologist

By Gaston Labat, M.D., New York City

Clinical Professor of Surgery, N. Y. University and Bellevue Hospital, Medical School.

PAIN is usually the symptom which brings the patient to the physician or to the stomatologist. Patients who know that they have bad teeth generally go directly to the dentist for relief, since they are under the impression that they can find relief by having their teeth attended to. Others, with a sore tongue, consult the stomatologist because they believe their denture or a broken tooth is responsible for their ailment. In a number of cases, however, the blame can be laid neither on dental affections nor on other oral lesions.

While there is a tendency for the layman to visit the stomatologist in the case of sudden and severe pain referred to the teeth, a great many people go to their family physician, because they have placed in him all their confidence and believe in his unfailing ability to alleviate their sufferings. It is the duty of the physician to diagnose the case and treat it, if within his province, as it is likewise that of the stomatologist to bring relief to the patient who consults him for oral diseases. Successful results depend chiefly on the ability to diagnose.

Thorough familiarity with the symptoms of tic douloureux and its clinical aspects is a guarantee of correct diagnosis. There are, however, so many contradictory opinions expressed in the literature concerning the etiology and pathology of tic douloureux, that the inexperienced physician is likely to be confused if he does not seek competent assistance.

Whenever it is deemed advisable to call in a consultant, be it with the object of securing added information for diagnostic purposes or as a final reference for therapeutic intervention, the best results are obtained by direct conversation. The use of introductory cards, without a word on the patient's history, cannot be considered active cooperation on the part of the man who refers the patient. However desirable it may be not to be influenced by a colleague's findings, the interchange of opinion on the patient's condition is of the highest value.

The ethics of the profession demand that a patient be returned to his family physician or to the man who referred him, either for diagnostic or therapeutic purposes, or both. In tic douloureux, alleviation of pain is the main object in view, and it must be borne in mind that the eradication of associated pathologic conditions and the maintenance of good health are essential in the establishment of long periods of relief.

The association of tic douloureux with toothache is of common occurrence. It is not an easy matter to diagnose their individual rôle in the causation of pain. There are certain characteristic features which make of the neuralgia an unmistakable syndrome. In the opinion of many clinicians, tic douloureux, at its onset, is difficult, if not impossible, to distinguish from dental neuralgia, especially when its beginnings are gradual and not violently spasmodic. It is only by the exclusion of dental and other causes that the diagnosis of the inveterate neuralgia may become established.

On the other hand, certain clinicians insist that tic douloureux is due neither to peripheral infection, such as dental or accessory sinus infection, nor to ascending peripheral neuritis, cellular changes in the gasserian ganglion, inflammation of its peripheral branches or arteriosclerotic changes in the blood vessels in or about the ganglion and its branches. They believe that the condition is essential, idiopathic, primary and possesses clinical characteristics which are unique in

the symptomatology of painful affections of the face.

In the presence of these contrasting opinions, it seems logical that, before useless extractions of teeth and explorations of sinuses are accomplished, in an attempt to eradicate the probable cause of the neuralgia, the clinical signs be subjected to the most scrupulous analysis. If, however, the diagnosis still remains doubtful, it would seem wise that the division of the trigeminal nerve distributed to the pain area be blocked, as a test. Two very useful purposes would thus be served: (1) relief of pain; and (2) noninterference with healthy teeth and sinuses.

Classification

Patients suffering from tic douloureux may be divided into three types, according to the manner in which they react during an attack: (1) violent; (2) apprehensive; and (3) placid. Descriptions are contained in the literature of patients giving extravagant performances during an attack of neuralgia, but these cases, I have found, are comparatively rare.

The *violent type* of tic douloureux, observed in routine practice, has the following forms:

1.—Suddenly, as the patient is describing his pain, he starts sucking in and biting on his cheek or his lower lip on the affected side; this does not stop until the attack is over. The patient is often seen with a swollen and bruised lower lip; actual bleeding is sometimes observed. After a few minutes, or even a few seconds of complete remission, a similar attack occurs, which leads to the diagnosis of tic douloureux of the third division. This is confirmed by the patient's answers as to the distribution of pain. In the absence of a traumatized lip, repeated sucking in of the cheek is characteristic of the same syndrome. Confirmation is obtained by examining the patient's mouth. The mucous membrane of the affected side is bruised or eroded and, at times, in the immediate vicinity is found a membranous exudate. Bleeding of the cheek is infrequently observed.

2.—Less frequently, the patient rubs his cheek violently during an attack. This is usually characteristic of tic douloureux of the second division.

The *apprehensive type* is the one with which we are most familiar. These patients generally give a history of toothache and often actually are bearers of oral infection (caries, pericoronal infection, an impacted molar or pyorrhea). These conditions may have nothing to do with the neuralgia; yet, they create difficulty in arriving at a diagnosis.

These patients usually enter the consulting room with an air of apprehension and, as they open the mouth for examination, the pain starts. It is so severe that certain parts of the face are thrown into spasmodic contractions, particularly when the neuralgia involves the maxillary division. The muscles may be contracted in a grimace or relaxed in a stare. The patient sits straight and motionless, as if frozen, in an attempt to control the pain. The attack lasts only a few seconds, and the muscles of the face then regain their normal appearance. There is then a period of complete remission, during which there is no pain and the patient allows the examination to proceed; but, knowing that the attacks recur at frequent intervals, he resumes the air of apprehension with which he came in. If an attempt be made to touch the patient's face or explore his teeth, he will quickly withdraw from the approaching hand and assume an attitude of hostility.

When the patient is seen during a period of remission, it is with reluctance that he would allow an examination, for he knows that there are certain parts of the face that cannot be touched without precipitating an attack. In that connection, some patients are afraid to wash or shave often; they are thus seen in consultation bearing light, yellowish scales of sebaceous matter on the cheek, particularly near the ala of the nose, or a growth of a beard several days old. They are stoical when the pain starts without apparent cause, but they have not the courage to precipitate an attack and are averse to the thought that the attacks may repeat themselves in rapid succession and become unbearable. For this reason they remain apprehensive.

This is a typical case of tic douloureux of the apprehensive type, which the stomatologist should not confuse with the pain elicited by dental pathosis, however extensive this may be. It can, nevertheless, be realized that the temptation is great to diagnose the patient's condition as one entirely dependent on local conditions, particularly because, in the minds of many men, tic douloureux is of obscure etiology and pathology, and has nothing to do with decayed teeth or infected sinuses. It is then that close cooperation, in the way of consultation, is to be sought before any attempt is made to eradicate pathologic conditions.

It is with the *placid type* that most difficulties are encountered. These patients give no outward signs of pain. While it is not possible for the observer to say when the attack begins and when it ends, the patient is well aware of it. There is no feeling of apprehension or hostility observed at the time of clinical examination. It is solely on the history that a correct diagnosis must depend and, in order to correlate the patient's answers, thorough familiarity with the varieties of the neuralgic syndrome is of the highest importance.

Diagnosis and Treatment

The clinical diagnosis of tic douloureux is based chiefly on the phenomena exhibited during an attack of pain, be it spontaneous or provoked: *a paroxysm, sudden, severe and short, followed by a period, short or long, of absolute freedom from pain.* When the patient is seen during a period of remission, he is apprehensive of being touched. If he fails to give an outward expression of suffering, examination should be conducted with the greatest care and scrutiny.

When the diagnosis has been made, the problem resolves itself into alleviating the pain and eradicating pathologic conditions present in the mouth. Alleviation of pain may be obtained by blocking the division of the trigeminal nerve involved. This should be done at the base of the skull, by the extra-oral route, since oral injections of alcohol are known to be associated with untoward effects. Prolonged anesthesia may be obtained by the use of mixtures of neocaine or procaine hydrochloride and 95-percent alcohol, in varying concentrations, depending upon the period of anesthesia desired. Under the cover of this prolonged anesthesia, pathologic conditions may be treated and, if the pain recurs, a blocking with pure 95-percent alcohol is then advisable.

It is not sufficient to eradicate pathologic conditions of the mouth to alleviate the pain of tic douloureux, but it is also necessary to look for other foci of infection and treat other conditions which might have a bearing on future recurrences of the attacks. Associations of tic douloureux have frequently been observed with Paget's disease, diabetes, tuberculosis, intestinal stasis, infections of the genito-urinary tract, etc. Whether or not these conditions are influential in the occurrence of the neuralgia has not been established; they, however, need special attention. The family physician is the proper man to give such attention, either by instituting adequate treatment or by directing the patient to the right specialist. After blocking the nerve, the patient should, therefore, be returned to the family physician. By so doing, cooperation becomes effective, not only for the diagnosis and alleviation of tic douloureux, but also for the treatment of associated pathologic conditions.

30 East 40th St.

NOTES AND ABSTRACTS

Electrogalvanic Lesions of the Oral Cavity Produced by Metallic Dentures*

FROM a study of more than 300 oral cavities which contained dissimilar metallic dentures, 71 percent of which showed some evidence of electrogalvanic phenomena, I have reached the following conclusions:

1.—The human saliva is a good electrolyte and dissimilar metallic dentures constitute the necessary electrodes; therefore, within every oral cavity containing dissimilar metallic dentures, there is a complete galvanic battery.

2.—The most common objective and subjective symptoms produced are: metallic taste, salivation, mucous patches, erosions, leukoplakia, nerve shocks, burning tongue, indigestion and nervous irritability. Each of these symptoms may be more or less intermittent.

3.—Positive cases of electrogalvanic injuries are promptly relieved by removal of the offending dentures and restorations with dentures that are of uniform electropotentiality.

4.—A recent survey of 150 consecutive cases, in which dentures had been changed since the first examination, revealed that 56.1 percent resulted in complete relief; 32.8 percent in only partial relief; and 11.1 percent in no apparent relief since the change. Of the patients having only partial or no relief, several have been reexamined and found to have dentures still of unlike electropotentiality.

5.—In order that the electrogalvanic phenomenon, with its serious pathologic changes in the oral cavity, may be avoided, manufacturing dental laboratories should endeavor to offer to the profession satisfactory denture materials that are of the same electropotentiality.

Everett S. Lain, M.D.

Oklahoma City, Okla.

*J.A.M.A. Mar. 11, 1933.

The Toothbrush Contraindicated in Acute Hypertrophic Gingivitis

IN acute gingival conditions, the tooth brush is definitely contraindicated and its use must be immediately discontinued, because it then tends to act as a traumatizing agent and thus to aggravate the clinical picture.—Isador Hirschfeld, D.D.S., of New York City, in *Dental Items of Interest*, Jan. 1933.

A LIVING FOR THE DOCTOR

The Doctor and the Depression

FOR some months we have been hearing much of the "forgotten man." This catchy phrase can be, and has been, variously interpreted. To one group it means the farmer; to another the white-collar man; to another the politician of one hue or another.

When boiled down, concentrated and analyzed to the last degree, we feel safe in claiming that the "forgotten man" can mean nothing but the man of medicine.

For some years the practice of medicine has been going through a critical period—a period that has been almost catastrophic in its dire effects. The invasion into the domain of legitimate medicine of the various cults, practicing their unethical but very efficacious advertising methods, has seriously hampered the legitimate physician. Bound by the iron dictates of his code of ethics, he has been placed at a serious disadvantage. To this grave handicap has been added the multiplication of free clinics, hospital centers, tuberculosis and infectious disease sanatoriums, and a host of other agencies for the free treatment of patients, many of whom are amply able to pay a fee. The activities of the social service agencies has done much to alleviate this evil, it is true, but there is much more that can and should be done.

Always the last to be paid, largely because of his unbusiness-like methods and the general ignorance of the medical man concerning the principles of medical economics, today he is not being paid at all, because of the deplorable effects of the period of financial depression. Detail men who are constantly entering the offices of the doctors are unanimous in asserting that there has been a remarkable and very serious slump in office practice everywhere. It is an open secret that a large number of doctors are months behind in their office rent, and that many of the large professional buildings have been carrying many of their tenants for varying periods, rather than close their offices and thereby empty the buildings. Many physicians who were, for years, specialists in various lines have been compelled to return to general practice in order to make ends meet in the struggle for existence. One of the detail men only recently told us that it was pathetic to know the large number of doctors who do not know where their next dollar will come from.

Here is a great evil that should and must be met. While Congress is appropriating vast sums to meet similar exigencies in various business classes, notably the farmers, the railroads and the banking institutions, nothing is being done to alleviate the great suffering in the noblest of all professions. And the deplorable fact is that the suffering medical man, because of his inherent pride and the fear of imperiling his professional standing, as well as his proper aversion to entering the bread lines, is heroically bearing his trial without uttering a word.

Are we not justified in claiming that the medical man is the real "forgotten man"? Are we not correct in calling attention to this very evident and serious social condition? No doubt there are millions of citizens who do not realize that the medical profession is facing a grave crisis, and who would take prompt and effective action if their attention were called to the deplorable state of affairs.

W. A. NEWMAN DORLAND, M.D., F.A.C.S.
Chicago, Ill.

NOTES AND ABSTRACTS

Social Insurance*

Conclusions

THE purpose of this series of articles on social insurance has been to arouse the rank and file of the medical and dental professions and, through them, if possible, the general public, to an impending danger; and to dispel a number of quite generally held false opinions.

The first of these is the very commonly held belief that the moment a professional man assumes a title and a government position he knows more and becomes more efficient than he ever was before; while the contrary is more often the case, because of the enervating effect of red tape and "paper work."

The second common error is that, by some magic, compulsory health insurance is going to escape the favoritism, nepotism, graft and, in fact, all of the evils of politics. This is a delusion, with which reformers and the intelligentsia in general are commonly afflicted. The practical man of affairs, and particularly the seasoned politician, does not fall into this error. Some time ago, during a heart-to-heart conference, a practical politician said what he really felt and knew to be true. He said, in substance, that we must remember that "We have government by politics, and you and I or all of us, with a hundred thousand others, cannot change this situation. I do not care whether you remove the control from the city to the state or to the federal government, it will still be controlled by politics."

The third common error, again held particularly by the reformers and intelligentsia, is that statisticians and economists can solve this problem unaided. Desirable, valuable and even necessary to a complete understanding of the problem as a study by competent economists is, there is one very important fact which many who have made a study of the problem do not seem to be able to realize; namely, that, in a matter where personal relation is such an important element as in the practice of medicine and dentistry, the ordinary formulae employed by economists do not and cannot apply. Personal relations cannot be measured by any mathematical formula devised. It is too elusive a factor to be measured by monetary or any other standards, and yet, of all the factors, it is by all odds the most important. Only the individual who has had an extensive experience in the practice of medicine or dentistry or the one who has had a long and serious illness seems to be able to evaluate properly this phase of the problem. Then again, the lack of medical knowledge by economists makes it impossible for them to appraise the difference between the personal, individual, care of the patient by the private physician and the more or less impersonal, mechanical, care of the panel or *Krankenkasse* physician, nor are they so situated as to have access to individual patients and, even if they had, they lack the training to know which is giving the better treatment.

From the foregoing it must be evident that this type of study and investigation has its limitations in cases where the personal element enters intimately with a social or economic problem and, if too much dependence is put upon it, wrong conclusions are bound to be reached. The more personal the matters under investigation, the less their value and the greater their limitations. One writer has expressed this idea very well in the following words: "There is real danger that the economist, lost in the abundance of his researches, finally overlooks the plain and easy road that lies directly before him."

Probably the most common error is the belief that social insurance will abolish poverty. On the contrary, it is, at best, only a palliative and, like all palliatives, if employed for any considerable period of time, always leaves conditions worse than when it was first employed.

Another common error, quite generally made by the more sensitive and emotional, is to believe that the receiving of charity is, of all things possible, the most degrading. Serious as the accepting of charity is to the character of the intelligent and sensitive, there are many other things even worse and one of these is the quite general practice of malingering, which compulsory health insurance and the dole encourage and foster among the workers of a nation. There is this fundamental and very important difference between accepting charity and a health insurance stipend—the former is still considered somewhat of a disgrace, while to get the latter, even through subterfuge, is considered highly respectable and clever.

There are two questions that the compulsory health insurance proponents have never

*This is the eleventh and last of this series of articles on social insurance.

answered, in spite of the fact that they have offered innumerable alibis that do "not alibi" and endless explanations that do not explain: First, why, if compulsory health insurance improves the health of a nation, as claimed by its proponents, is the death rate no lower in those countries that enjoy this "great blessing" than in those countries not so blessed? And, second, why, shortly after and since the introduction of compulsory health insurance, have the number of days lost by the workers per annum steadily increased? The answer to the first question is that it does not improve the general health of the people, and the answer to the second is that, among a very large percent of the working population, it substitutes for *the will to get well and the will to work, the will to stay sick and the will to loaf.*

Personally, I am quite satisfied that Germany and England should make their experiments in social insurance and Russia her experiment in state medicine, but I am happy that these experiments are being made three and four thousand miles, respectively, from our shores. I am firmly convinced that if we can stave off these schemes for another ten years we will be spared them, because they will prove so harmful to medical practice and medical progress and so destructive to national character that we will escape their blight. Time will demonstrate that they are fundamentally wrong—a backward step in civilization.

Human progress in most lines has always been very largely the result of unhampered personal endeavor and rarely, if ever, the result of governmental action primarily. Will we never be able to learn from experience and must there always be recurrent periods of halt and even retrogression in human progress?

American medicine and dentistry stand today at the threshold of their greatest opportunities and beside the abyss of their greatest dangers; the former because of their marvelous advances in the recent past; the latter because they are being pestered and annoyed by a small but vociferous group of misinformed, uninformed, unwise and, in a few instances, self-seeking, selfish, self-appointed lay advisers. These are troubled times for these two allied professions; the men who stand firm now will deserve the gratitude of future generations of men and women.

EDWARD H. OCHSNER, M.D.

Chicago, Ill.

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Concrete Economic Problems

WE HAVE long been giving help to our readers in dealing with their professional and literary problems, and we are eager to give the same sort of service in connection with specific economic and ethical problems.

We should like to publish every month, in this department, one or more concrete and specific reports of difficulties along these lines, and ask our readers for suggestions as to their solution.

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GEORGE B. LAKE, M.D.,
Editor.

North Chicago, Ill.

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What the County Medical Society Can Do for Its Members

THE physicians and dentists of Lane County, Ore., established a centralized credit and collection bureau with lay officers, supervised by the county medical societies. The suite occupied by the Bureau was also used for general professional activities, such as health exhibits, radio talks, periodic health examination weeks, physicians' and nurses' registry, etc. As stated by Dr. C. E. Hunt, of Eugene, Ore., in *Northwest Med.*, June, 1932, the plan has worked exceedingly well in promoting the economic position of the professional men and in furthering the health interests of the community. The author is of opinion that:

1.—A permanent headquarters and trained lay staff, under the direction and control of the local medical, dental and nurses' associations, is a feasible and effective form of local organization.

2.—The economic welfare of the physician, dentist and nurse can be protected and fostered through such an organization, by educating the public to their financial duty to the physician and his co-workers.

3.—The respect of the public for the trained physician, dentist and nurse and their appreciation of the truths of scientific medicine, in contrast to quackery, are immeasurably increased.

4.—The health educational work rightfully demanded by the people in a progressive American community can in large part be cared for, or at least controlled, through such an organization.

THE SEMINAR

[NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 1st of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

PROBLEM NO. 4 (SURGICAL)

Presented by Dr. E. O. Houda, Tacoma, Wash.
(See CLIN. MED. & SURG., April, 1933, p. 226)

RECAPITULATION: A woman of 37 years complained of pain in the bladder; frequent micturition; an almost continuous watery vaginal discharge, sometimes having a fecal odor, at others sickeningly sweet, and worse when lying down; and irregular menstruation, sometimes alarmingly profuse. These symptoms began 4 years ago, except the discharge, which has lasted for one year. The fecal complication appeared six months ago, after treatment by an "electric specialist."

Examination showed a slightly movable mass filling the floor of the pelvis, protruding from the vagina and displacing the urinary meatus upward and to the right. When this tumor is pushed up, a gush of watery fluid, not containing urea, escapes. The *blood* shows a negative Wassermann reaction; hemoglobin, 60 percent; red cells, 3,000,000; leukocytes, 6,300. The examination is otherwise negative.

Requirements: What is the probable nature of the tumor, the origin of the watery discharge and the mode of surgical attack?

DISCUSSION BY DR. W. A. NEWMAN DORLAND, CHICAGO, ILL.

THE diagnosis here lies between the very rare condition of sarcoma of the uterine mucosa and the much more common epithelioma of the cervix uteri, with the formation of a cauliflower excrescence. Both of these conditions are characterized by the presence of a large vaginal mass, which is very friable and which is associated with profuse hemorrhages and an offensive serosanguinolent discharge, which is often fetid. The sarcomatous mass is botryoid in nature (like a bunch of grapes), and the whitish fragments in the discharge are broken down segments of the grape-like masses.

The condition in Mrs. St. G. is probably cancer (epithelioma) of the cervix uteri, with cauliflower formation. Her age is the cancer age; she has given birth to a child, therefore there has been some traumatism of the cervix; she shows the cancer anemia, due to hemorrhages; the tumor mass is not botryoid. There are probably no metastases, hence no marked loss of flesh. The watery discharge comes from the over-congested utricular and Nabothian glands.

The treatment should be rapid, extensive curettage, to remove the soft cauliflower mass, followed by an extensive course of radiation. This method gives better results than does hysterectomy.

DISCUSSION BY DR. EMIL C. JUNGER, SOLDIER, IA.

THIS seems to be a plain case of pelvic pathosis, which needs opening by the vaginal route. This should be simple.

If I had to diagnose this draining protrusion, I would say it is either a gauze sponge, left there at the previous operation, a dermoid cyst or a pelvic abscess. Free drainage under local or general anesthesia, is the remedy.

DISCUSSION BY DR. HENRY SCHMITZ, CHICAGO, ILL.

THE history and physicial examination point to the probable existence of a uterine tumor which originated in the anterior uterine wall, probably the cervical portion, and had extended downward into the vesico-vaginal septum. The irregular bleeding and the intermittent profuse hemorrhages are presumptive signs of a malignancy, though the fetid continuous vaginal discharge may be due to a necrotic degeneration of the mass or to the friability of a malignant tumor. Evidently the mass acts like a ball valve, occluding the vagina in the upright position of the patient, and retreating upward in the prone position, releasing the retained discharge.

The duration of the disease (about 4 years) points to a benign tumor; however, the appearance of the malodorous, watery discharge, beginning one year ago, might indicate a malignant degeneration. Whether the "guaranteed cure by an electric specialist" bears a causative nature, it is impossible to state.

The procedure in the case should be, first, a diagnostic one. It consists in a cystoscopic examination, to determine the influence of the

growth on the urinary bladder or the actual invasion of the vesical mucosa. A careful palpation and exploration of the vagina should then be made. If friability of tissue or ulceration are found, either in the vagina, the cervical canal or the uterine cavity, then tissue should be removed with a curette and subjected to sectioning, staining and microscopic examination. Finally rectal palpation and proctoscopy should be done, to determine the lumen of the rectum and the state of the rectal mucosa and the pararectal connective tissue.

As soon as a correct diagnosis has been made, the plan of treatment may be formulated. Should the lesion be benign, surgery may be resorted to, after clearing up the infection. The latter may necessitate the insertion of a T-rubber drainage tube, eventually up into the uterine cavity, and the careful application of an antiseptic, such as compound tincture of iodine, a 20-percent aqueous solution of Mercurochrome or Metaphen solution. Should the lesion be malignant, then it is inoperable on account of the extent of the growth. The correct and adequate use of high-voltage roentgen rays is indicated. Should recession occur, the roentgen-ray treatments may be followed by the intrauterine and vaginal use of radium.

Dr. Emil C. Junger, a frequent participant in the Seminar discussions.

The general constitutional condition necessitates good general medical management, including sunshine, wholesome food, vitamins, iron and copper. Should the anemia persist, whole-blood transfusion must be done.

In conclusion, it may be said that a correct diagnosis should be arrived at first, and the plan of treatment based on the diagnosis.

Discussion by Dr A. S. Pearl, Highwood, Ill.

FROM the history and the report of the physical and laboratory findings in this case, I should judge the tumor to be either a uterine myoma (although the absence of pain during menstruation is against this), or a left hydrosalpinx, or possibly a tubo-ovarian cyst. Any of these would displace and compress the bladder, producing the urinary symptoms and the distortion of the urethra mentioned.

We see cases of the first of these which, if of the submucous variety, eventually produce an almost continuous watery vaginal discharge. Assuming the tumor to be of this nature, I should think that there is cystic degeneration because, when the tumor is pushed upward, a sudden gush of fluid escapes.

I am not so sure that hydrosalpinx emptying through the uterus produces the picture given here, but in some cases of hydrops of the tube the fluid contains solid matter (epithelial cells) which the "small white flakes" mentioned by Dr. Houda may be.

I should consider malignant disease unlikely, on account of the duration of the complaints.

Inasmuch as the fluid has a fecal odor only at times and is described in another paragraph as having sickening-sweet odor, I deduce that the patient has a recto-vaginal fistula, which would also explain the "fecal complication of undetermined nature" which occurred during the electric treatments.

If my guess as to the first question put in the requirements of the problem is correct, it follows in answer to the second that the origin of the profuse watery discharge is the said tumor, emptying through the uterus.

The mode of surgical attack would be laparotomy through a median or left paramedian incision, with removal of the uterus and the tumor.

Solution by Dr. Houda

THE tumor proved to be a leiomyoma of the broad ligament, which grew downward, under the urethra, with most of it beneath the left vaginal wall. Bimanual examination was impossible, even under anesthesia.

After a trocar stab of the growth, which was negative in so far as fluids were concerned, the abdomen was opened. A very small uterus was uninvolved with the growth,

being readily palpated from fundus to vaginal cervix. The round ligaments, which had been shortened several years previously, obviously by bringing them up through the abdominal wall, were noted. The growth was covered by normal tissue of the broad ligament. Abdominal adhesions were absent.

The abdomen was closed and the tumor attacked from below. A steel sound was placed in the urethra as a prophylactic guide. Traction on the tumor disclosed that much downward displacement was impossible and, because of a tendency to rotate, an elyptic incision, crossing the direction of rotation, was elected. An outer incision, three inches in length, paralleled the vaginal outlet. The inner incision included part of the vaginal mucous membrane. Forceful traction, with blunt dissection, allowed the tumor to turn out of its bed readily. Bleeding was easily controlled.

The wound was closed with interrupted sutures, with a small gauze drain, which was removed after 48 hours. On removal of the mass the urethra dropped to its natural position. An almost healed rectovaginal fistula was present in the center line of the vaginal wall, about two inches above the perineum. A light "quarantine" pack of dry gauze was placed against the fistula and separated from the drain in the wound with gutta percha. To prevent contamination of the wound from the leakage of the fistula, temporarily at least, the rectum was mildly dilated and a rectal tube inserted, around which two suppositories of belladonna and opium were placed. Recovery from the operation was uneventful. Should the fistula fail to heal, which seems unlikely, it will be corrected at a later time. The vaginal discharge was due to congestion, and its failure to pass by the mass readily caused it to collect in the upper vaginal vault, until released by position or manipulation.

PROBLEM NO. 6 (SURGICAL)
PRESENTED BY DR. W. A. NEWMAN DORLAND, CHICAGO, ILL.

MRS. F., age 43 years; married 18 years; widow 4 years; sterile. Menstruation has always been regular in time and normal as to quantity; 28-day type; not painful; last menses 3 weeks ago. There has been no abdominal nor pelvic pain, nor any leukorrhea. The patient seems to be in excellent health, has a somewhat capricious appetite, but is not losing flesh; weight 135 pounds. For the past 18 months she has noticed a slowly increasing growth in the abdomen, which is not painful to the touch, and is slightly movable from side to side. Her bowels are regular; no difficulty with urination.

Physical Examination shows a well-nourished body; abdominal wall, firm; no striae nor other discoloration. The abdomen, however, is distended by a seemingly solid, nonpulsating mass, centrally located, extending almost up to the diaphragm and with an apparently smooth surface. The growth is only slightly movable and on palpation is not sensitive. The percussion note is dull over the tumor, with normal resonance above in the epigastrium and to either side. Vaginal examination shows an unruptured perineum; no relaxation of the vaginal walls; cervix high and in normal position, pointing slightly posteriorly; os uteri of pinhole size. The tumor cannot be lifted by the examining finger. There are no tumor masses in the pelvic cavity, the growth lying apparently above the pelvic diaphragm.

X-ray study of the abdomen shows a smooth, pyriform tumor, centrally located; pelvic bones normal in size and shape. The blood is normal in every respect—negative Wassermann and Kahn reactions; 4,500,000 red cells; 6,000 leukocytes, hemoglobin, 76 percent. Urinalysis normal—no sugar, no albumin, no casts.

Requirements: What variety of tumor is probably present and what is the indicated treatment?

THE SURGEON

The training of the surgeon must not only allow, it must urge, his mind to stray beyond the hard boundaries of old knowledge, over the edge of firm beliefs, into wide territories as yet unexplored and even undivined. In this way only is there escape from the danger which besets the surgeon in the future, the peril of facile automatism in empty dexterities. In this way may the physiologist be brought back from his vagrancies and encouraged to realize that his science best fulfills its destiny when it is applied to the understanding of the functions, normal and aberrant, of the organs of man.—LORD MOYNIHAN, *in* "The Advance of Medicine."

CLINICAL NOTES AND ABSTRACTS

Static versus Dynamic Pathology

ALL pathologic processes are essentially dynamic. They are phenomena actuated by chemico-physical activities which are constantly taking place. There is no rest in the evolution of disease; it is constantly going on. Yet the criteria for studying pathologic processes consist of viewing certain arrested stages in the evolution of disease. The modern pathologists are but little advanced from their ancient prototypes. Weighing and measuring diseased organs and slicing them to study their minute details under the microscope, furnishes information only about the disease at a certain arrested stage. It does not tell what happened up to that stage: It cannot, because we are attempting to interpret a dynamic phenomenon by means of static studies.

Among the first to realize that disease can most reasonably be explained in terms of atomistic physics was Leroy. He believed that diseases which presented sudden crises or seizures, such as epilepsy and eclampsia, suggest that physico-chemical changes are responsible for their abrupt development. The protein complex, he believed, is a transient aggregate of amino-acids, each surrounded with a swarm of ions, and around these, in turn, gravitate a swarm of satellite electrons, the whole forming a miniature solar system. When these amino-acids, ions and electrons are released, they settle on vessel walls and membranes, modifying their osmotic and electric tension. If it is to be assumed that proteolysis is always accompanied by an increase in the osmotic tension, this would explain at once all this group of pathologic conditions that develop like an explosion.

Even before Leroy, Wolff, of Berlin, was convinced that disease, as well as normal processes, is dynamic and that they are ununderstood only when interpreted in terms of energy. Wolff utilized methods in definitive and integral calculus to elaborate the law of transformation of bone. He was of the opinion that calculus is the language of nature and might be used to explain biologic as well as mechanical phenomena.

Wolff's law correlated the shape and inner structure of bone with the mechanical stress acting on it. A little later, another German physician, Traube, caught a glimpse into the methods of nature and tried to read disease in the light of a flux, rather than a frozen section. Traube's work on surface tension, in relation to osmosis, necrosis, digestion and hemolysis, was based largely on physical and mathematical studies.

Modern physicists realize that energy is no longer a continuum. It is atomic, like matter. Disease is essentially energy. Therefore, it too is atomic. It is an entity, discrete in both space and *time*. It is necessary to realize that time is the most essential factor in disease. In order to understand it properly we must study it in all its time relations, while it is taking place, not after it has taken place, as is done at present.

Cytophysics (physics of the cell) is the foundation of the real study of pathology. Among the moderns, none has done more than Dr. George Crile to correlate physical chemistry with pathologic processes. The autopsy knife and the microscope are crude instruments in the study of disease. There are no adequate instruments at the disposal of the pathologist for the study of pathology in action, because none have been sought.

Sir Jagadis Bose, the Hindu botanist, has contributed some of the most original and most fundamental ideas to plant physiology and pathology. He has invented a set of instruments which have enabled him to study physiology and pathology in action. One of these is the optical sphygmograph. By means of this instrument he was able to study the effects of drugs on plants. By the use of this machine, Bose has demonstrated the quaternary cycle of lethargy, stimulation, exhaustion and extinction in plants. He has, perhaps, been the first to appreciate that disease and its various stages is a *process*, with no stops for demarkation.

Bose has arrived, from these studies, at an original definition of death, which, in view of experimental data behind it, must command respect. Says Bose: "Death is an extreme case of stimulation." The reason for this definition is that, after a slight shock, the organism is stimulated; a severe shock dazes the organism, but it recovers; an intense shock causes insensibility and extinction.

The application of refined instruments of precision to the study of disease will reveal much that we will not be able to learn by any other means. These instruments are not available at the present time, because no one has fully realized that a thorough understanding of modern physics is more essential to the solution of problems in medicine than any other means at our disposal.

Those of us who are acquainted with the history of pathology usually divide it into two eras: The first, the era of gross pathology, was probably founded by Morgagni, which consisted simply of being able to differentiate the healthy from the diseased by noting that diseased organs were altered in size, weight, color, shape and other gross aspects. The second era was ushered in by Virchow, with the establishment of cellular pathology. The organs were sliced into paper-thin slices and their cellular units studied under the microscope. But even microscopic pathology is static. It is a picture of a process stopped in its tracks.

The third era in pathology, which is just emerging, is that of the cytophysics of disease. With its further development, we may be able to get an inkling into the real nature of disease.

EDWARD PODOLSKY, M.D.

Brooklyn, N. Y.

Look for THE LEISURE HOUR among the advertising pages at the back.

Use of Bacteriophages in Wound Infections and in Bacteremias*

THE application of bacteriophage to the treatment of furuncles and carbuncles seems to be on a well-established basis. We advise that the staphylococcus bacteriophage be introduced into the lymph spaces about the boil through a very fine needle and that the injection treatment by multiple punctures be repeated after about 48 hours. A considerable experience has led my associates and me to the opinion that lesions of this type, due to staphylococcus, should be treated with bacteriophage routinely.

Infected wounds, whether accidental or surgical, have been treated by bacteriophage in several instances, with good success. When the infection is chiefly by staphylococcus aureus, local applications of dressings, wet with the staphylococcus broth bacteriophage filtrate, usually bring about rapid improvement.

We have treated fistulous tracts of the abdominal wall (due to operative wounds being continually reinfected by intestinal contents) by application of large amounts of mixed bacteriophage preparations, including those active against the staphylococcus and other germs. In two instances the patients have done very well.

In blood-stream infections we have had most experience with those due to the staphylococcus and we recommend local applications of large quantities of the bacteriophage to the surface of the primary staphyloccal infection and, at the same time, intravenous injections of a special bacteriophage prepared for this purpose. We have observed some instances of actual recovery after repeated positive blood cultures in staphylococcal bacteremia.

Bacteriophage therapy is not a dramatic, sudden and decisive remedy for severe infections. I prefer rather to regard it as a procedure which sometimes seems able to tip the balance in favor of recovery of the patient.

WARD T. MACNEAL, M.D.

New York City.

*Am. J. Med. Sc., Dec., 1932.

Endocrine Treatment for Gynecologic Patients*

ENDOCRINE dysfunction is a frequent cause of menstrual and other gynecologic disorders and sterility. A special endocrine clinic, which has been established in connection with the department of gynecology, Jefferson Medical College, Philadelphia, serves for the study, diagnosis and treatment of functional gynecologic disorders, in accordance with the newer ideas relative to the physiology of reproduction. Some deductions from the clinical work are:

The anterior pituitary and the follicular hormone tests are important diagnostic aids in estimating ovarian function.

The picture presented by the endometrium has proved the most important single observation in estimating ovarian function.

The demonstration of anterior pituitary hormone in the blood and urine seems to be a reliable indication of primary ovarian failure.

A positive follicular hormone test is not an invariable index of full ovarian activity, since large amounts of this hormone may be found in some cases of amenorrhea and during the first stage of the natural menopause. A negative reaction, however, is an accurate index of follicular inactivity.

The administration of a potent ovarian and pituitary preparation, at the proper phases of the cycle, gives promise of value and may

*Am. J. Obst. & Gynec., July, 1932.

be a step forward in the treatment of menstrual irregularities and sterility.

What we need most is a more potent anterior pituitary extract.

Thyroid products remain as possibly one of the most reliable and potent preparations at our command today and should always be tried when the basal metabolism is low.

The roentgen rays, when judiciously applied, seem to be an important therapeutic agent in combating endocrine dysfunction, with its associated manifestations.

DRS. B. M. AUSPACH AND J. HOFFMAN.
Philadelphia, Pa.

Treatment of Some Common Types of Heart Disease*

MANY physicians have the impression that heart disease, regardless of type, calls for the administration of digitalis. Such an attitude is not only unscientific but, at times, may be a serious menace to a patient's life.

The subjoined table summarizes, in their order of effectiveness, the agents which experience has shown to have the greatest effectiveness in the treatment of some common types of heart disease.

Hypertensive Heart Disease	Congestive failure present: I. Regular rhythm.—1. Salyrgan. 2. Ammonium nitrate. 3. Digitalis. II. Auricular fibrillation.—1. Digitalis. 2. Salyrgan. 3. Ammonium nitrate.
Coronary Sclerosis	I. Angina pectoris.—1. Regimen for mode of life. 2. Xanthine derivatives. 3. Surgical procedure. II. Congestive failure.—1. Salyrgan. 2. Ammonium nitrate. 3. Digitalis. III. Acute coronary occlusion.—1. Rest. 2. Morphine. 3. Theobromine. 4. In presence of arrhythmia: quinidine, digitalis. 5. In presence of congestive failure: salyrgan.
Chronic Rheumatic Heart Disease	Congestive failure present: 1. Regular rhythm.—1. Salyrgan. 2. Ammonium nitrate. 3. Digitalis. 4. Venesection. II. Auricular fibrillation or flutter.—1. Digitalis. 2. Salyrgan. 3. Ammonium nitrate. 4. Venesection.
Syphilitic Heart Disease	I. Without congestive failure.—1. Iodides and mercury, followed by 2. Arsenicals (cautiously). II. With congestive failure.—1. Salyrgan. 2. Ammonium nitrate. 3. Iodides and mercury.
Heart In Hyperthyroidism	I. Exophthalmic goiter.—1. Without congestive failure, (a) compound solution of iodine; 2. With congestive failure, (a) compound solution of iodine, (b) salyrgan, (c) ammonium nitrate, (d) digitalis (avoid toxic dose). II. Adenomatous goiter.—1. With congestive failure, (a) salyrgan, (b) ammonium nitrate, (c) digitalis (avoid toxic dose).
Heart Failure With Nephritis	1. Xanthine derivatives. 2. Glucose solution intravenously. 3. Digitalis.
Adams-Stokes' Syndrome	1. Epinephrin. 2. Ephedrine. 3. Desiccated thyroid gland. 4. Barium chloride; and in addition, if congestive failure present, salyrgan, ammonium nitrate, xanthine derivatives.
Paroxysmal Tachycardia	1. Quinidine sulphate. 2. Digitalis. 3. Calcium.
Auricular Flutter	1. Digitalis. 2. Quinidine sulphate.
Fibrillation	1. Quinidine sulphate.

Rochester, Minn A. R. BARNES, M.D.

*Northwest Med., Aug. 1932.

Management of Intestinal Stasis in Children*

THE following treatment is suggested for the correction of intestinal stasis in hypertonic infants with nerve imbalance: (1) Atropine in near-physiologic doses, with liquid petrolatum, once daily, and the aromatic fluid extract of cascara sagrada in sufficient dosage, three times a day, to produce two evacuations in twenty-four hours; (2) a mixed diet, with cereals, vegetables and fruits predominating; (3) fresh cow's milk in rather small quantities, acidophilus milk being substituted when it will be taken by the child.

Three meals daily are permitted, with a five hour interval. Milk between meals is to be avoided in all cases of stasis. In those in which anorexia is not a prominent symptom, raw fruit is advised for the midafternoon.

C. G. KERLEY, M.D.

New York City.

Barbiturates in Obstetrics (Questions)

TWO questions arise in my mind after reading the very fine article by Dr. Goehl, in the April CLIN. MED. & SURG.

In the ordinary practice of obstetrics, in the home, where we do not have the advantages of expert nursing, how far is it safe to go in the use of barbiturates?

I believe that many practitioners now use pituitary extract frequently, to hasten labor. Would the use of a barbiturate or scopolamine interfere with the use of pituitary extract, when one feels the need of the latter?

C. A. POAGE, M.D.

Colusa, Calif.

(Answers)

A QUESTION has been asked regarding the feasibility of using barbiturates and the doses most desirable in home obstetrics, where expert nursing is not always available. This, indeed, is a timely question, since we still have a great number of deliveries in the home.

I have experienced the use of barbiturates in home obstetrics quite frequently and find them quite satisfactory. If expert nursing care is not to be had, then, of course, it is not safe to use the larger doses, and complete relief of pain cannot be obtained; nevertheless, analgesia can be carried out by methods described by me in the April, 1933, number of this journal.

I feel that two or three capsules of Nembutal (1½ grains each) or two capsules of Sodium Amytal (3 grains each) can be safely given as the initial dose in almost any labor, at any stage. During the early part of the first stage, in a primipara, this can be supplemented with pantopon, grain 1/3, or pantopon and scopolamine. (In such a case, not so much barbiturate should be given.) In multiparas, where delivery is inevitable within two or three hours, the barbiturate may be supplemented with 1/150 grain of scopolamine. If labor is prolonged, one or two more capsules of Nembutal, Sodium Amytal, or any other suitable barbiturate may be repeated in four or five hours. Another way to proceed with barbiturates in home obstetrics is to give one or two capsules every hour, according to the result obtained, thus gradually building up the effect.

In reply to the question concerning barbiturates and pituitary extract, I am one who thoroughly agrees with the modern teaching in regard to the use of pituitrin for hastening labor. *It should be used for this purpose only in very rare cases, by the specialist and under strict precautions.* In my experience as far as is determined, barbiturates do not interfere with the action of pituitrin on the uterus.

R. O. GOEHL, M.D.

Grand Forks, N. D.

Look for THE LEISURE HOUR among the advertising pages at the back.

Clinical Reactions to Vaccines as Guides to Treatment*

VACCINE skin tests, when properly conducted, may afford accurate information concerning the reactivity of a human being to bacteria, whether the testing material be made from organisms existing in his body or derived from other sources. We have developed a method of performing vaccine skin tests and of interpreting their reactions, which improves the technic of vaccine therapy.

The reactions to be described are based on twelve years' work on 900 patients, but more especially on 328 of these patients, with asthma supposed to be of bacterial origin.

The method of vaccine testing consists of isolating, in pure culture, from all possible foci of infection, and preparing as vaccines all culturable organisms, with the exception of sporebearers. In each case the testing vaccine was a one-percent suspension of heat-killed bacterial substance in physiologic saline solution, injected (0.01 cc.) intradermally.

*J.A.M.A., Sept. 24, 1932.

*Am. J. Med. Sc., Aug, 1932.

An early wheal reaction signifies that the vaccine causing it, whether autogenous or not, should be used in treatment. The intensity is a guide to subsequent dosage.

A late local skin reaction signifies that the autogenous vaccine causing it should be used for therapy. If marked, the dosage should be less than if slight.

A general toxic reaction (malaise, nausea, etc.) signifies that an overdose of vaccine has been employed.

A symptomatic reaction—increase of allergic symptoms—signifies an overdose and perhaps that an undrained focus of infection exists. It also indicates that the action of the vaccine is clearly specific.

Relief reaction—relief following the testing vaccine injection—signifies that a favorable dose of a specific desensitizing substance has been administered.

A reaction at a focus of infection may indicate the need for focal surgery.

A negative reaction appears to indicate that the organisms are harmless and of no benefit to the host.

Usually slight or absent local vaccine skin reactions call for an increase in the amount of the therapeutic dose. A decrease in therapeutic dosage would follow: (1) a very marked local reaction; (2) a general toxic reaction; (3) a symptomatic reaction; (4) a focal reaction.

We believe that careful attention to the findings in vaccine skin tests would lead to the avoidance of vaccine therapy in persons unfitted for it.

Drs. W. S. Thomas and M. D. Touart.
New York City.

Bacteriophage in Staphylococcic Bacteremia*

WE HAVE been able to produce a staphylococcus bacteriophage which is highly potent against a large majority of bacteria of this species found in infections of the blood stream, and to prepare this agent in a nearly protein-free medium. It has now been used by external application, by subcutaneous injection, and by intravenous injection, in a series of fifteen patients with staphylococcus bacteremia, with recovery in seven cases. The treatment is not a simple procedure, and the course of the disease leading to recovery is quite prolonged.

Bacteriophage is a remedial agent which, when carefully and intelligently employed, may be expected to assist somewhat in the treatment of staphylococcus bacteremia, a disease that must still be regarded as extremely grave.

Previous to 1929, my experience with patients giving two successive positive staphylococcus blood cultures was extremely uniform: all died. Treatment with bacteriophage shows that while the condition is very grave, it is not necessarily hopeless.

W. J. MacNeal and F. C. Frisbee.
New York City.

*J.A.M.A., Oct. 1, 1932.

Asymmetrical Breast Deformities*

THE conspicuous types of asymmetrical breast deformities may be classified as follows:

1.—Asymmetry due to unilateral hypertrophy (the opposite side being supposedly normal).

2.—Bilateral asymmetrical hypertrophy.

3.—Asymmetry due to unilateral undevelopment or underdevelopment.

4.—Asymmetry caused by a reversed development of the two breasts (hypertrophy on one side and underdevelopment on the other).

Five cases with conspicuous breast asymmetries, which I have operated upon during the past two years, would indicate that these malformations are more frequent than is commonly believed. The etiologic factors are not easily determined. Although breast development is undoubtedly influenced by hormones of internal secretion, it is difficult to explain their unilateral action.

Underdevelopment of embryonal origin is easily comprehended, in instances where absence or lack of development of the breast is accompanied by other abnormalities of the thoracic wall, upper extremity or the organs of reproduction. In one case of *micromastia*, all these malformations were present. In two other instances there was a deformity of the thoracic wall directly under the oversized breast. Contrary to the prevailing belief that the larger breast is commoner on the left side, because of feeding the infant there, in four out of five of my cases hypertrophy was on the right side. This would seem to indicate that there are other causes for the condition besides overactivity of the gland.

Trauma as a contributing factor in breast hypertrophy is often caused by undue pressure of brassieres used to conceal the deformity.

Cystic fibromas were responsible for rapid asymmetrical hypertrophy in one case.

Lactation was impossible in the two married women, because of the quantitative and qualitative insufficiency of milk. Hereditary

*Presented before the Society of Plastic and Reconstructive Surgery, New York, Jan. 30, 1933.

factors were absent in all patients except one.

Surgical Indication: The indication for surgical repair depends on the degree of asymmetry and the age of the individual. Unilateral repair is done in cases where the supposedly normal side is not too large and pendulous. Reduction of the oversized breast aims to have it correspond in size and position with the other one. *The procedure of choice* is reduction of the breast in all diameters and transposition of the areola into a properly shaped opening of the skin covering the breast. Surgery in these cases is more elaborate than in the symmetrical type, as in unilateral repair the measurement must coordinate with the supposedly normal breast. Excessive diameter of the areola is responsible for a shortage of skin covering and requires the main incision to be placed above the submammary fold, thus rendering it partly visible. The suturing of the transposed nipple under excessive tension favors venous stasis and thus endangers the blood supply.

Other factors which may be responsible for necrosis of skin and nipple are the formation of hematomas or excision of too much glandular tissue in one stage. Institution of drainage for the first 24 hours after operation and repair of an excessively hypertrophic breast in two stages are the main requirements for prevention of partial necrosis.

JACQUES W. MALINIAK, M.D.

New York City.

Send for your copy of "Serums and Vaccines." Your patients need this information.

Antitoxin Treatment of Erysipelas*

DURING the past five years, the use of antitoxin has been routine in the treatment of erysipelas at Bellevue Hospital, New York; 3,311 patients have been treated.

The antitoxin used is prepared by immunizing horses with several strains (8) of the streptococcus of erysipelas. Ten cubic centimeters of concentrated antitoxin, are administered intramuscularly, as soon as the patient is seen, and another dose of 10 cc. is given every 12 to 24 hours until the desired effect is obtained.

The average duration of the disease is reduced about 60 percent. The number of deaths in more than 3,000 patients was reduced 30 percent. About 5 percent of the patients are resistant to this method of treatment.

DRS. D. SYMMERS AND K. M. LEWIS.

New York City.

*J.A.M.A., Sept. 24, 1932.

Mechanism of Anemia in Infancy*

THERE are three possible etiologic factors in every case of chronic anemia, namely: infection, nutrition and constitution. The so-called "physiologic anemia" of both full-term and premature infants in the first few months of life, may be considered to be due to a temporary constitutional factor.

Many children do not recover their normal hemoglobin percentage after infection. Faulty diet prolongs the anemia in these cases. During infection it is virtually impossible to produce any therapeutic effect on anemia that will last more than a very short time.

The lack of iron in the diet is of the utmost importance to an understanding of many cases of nutritional anemia, but in many others we have to look further than a mere lack of a building-stone for hemoglobin. The idea of some toxic substance in the milk (such as fat) may be right, although this idea has never been much more than a somewhat plausible theory.

The effect of inorganic iron in overcoming anemia is without question. Its stimulating action has long been known. In my infant cases two things are worth pointing out: (1) the reticulocyte rise occurred immediately after iron was given, not after the lapse of several days, as in the case of adults, and the rise was greater than in adults; (2) there was a parallelism between the extent of the rise in reticulocytes and the rapidity with which the red cells rose.

The effect of copper is more difficult to prove. In a series of cases, it had no demonstrable influence on the reticulocytes, although it had a striking effect on hemoglobin formation. Analysis of results shows that iron affected principally the phase of hemopoietic activity concerned with red-cell increase, and that copper affected chiefly hemoglobin formation, with a consequent tendency to an increased color index.

Nothing that has yet been done has shown that the addition of inorganic copper is essential to the cure of any cases of anemia. It accelerates recovery in some cases, but, from my studies, I am inclined to think that its chief use will be in those cases in which it is desired to raise the color index. Whether it will prove to be of use in the anemias of older children or adults, remains to be seen. Such striking effects as I have occasionally seen in infants are not to be expected in older patients.

HUGH JOSEPHS, M.D.

Baltimore, Md.

*Bull. Johns Hopkins Hosp., 51:185, October, 1932.

DIAGNOSTIC POINTERS

Technic for Skin Testing

SKIN tests performed by the scratch method lack uniformity.

In the technic I am using, a sterile wooden applicator, held between the thumb and index finger, is substituted for the scarifier. The point of the applicator is applied against the skin through the testing material, with firm pressure. The applicator is then rolled back and forth between the fingers, still applying firm pressure. I have found that six maneuvers of this kind are sufficient. A round abrasion of the skin results, the circle being somewhat smaller than that of the end of the applicator. This method has been used with satisfaction for allergy and in the Von Pirquet test.—DR. H. F. LANGHORST, of Elmhurst, Ill., in *M. J. & Record*, Oct. 5, 1932.

Cardiac Pain

ANIMAL experiments have shown that cardiac pain is caused by ischemia or anoxemia of the heart muscle.—DR. DON C. SUTTON, of Chicago, in *J.A.M.A.*, Nov. 7, 1931.

Retinoscopy

RETINOSCOPY, when used on eyes under complete influence of a suitable cycloplegic, is the most scientific, the most accurate, and the most universally applicable method of testing the eye for a refractive error. It also lends itself to rapid work, and is easily checked up for perfection. However, even with retinoscopy, the correct fitting of glasses remains an art as well as a science.—DR. W. M. DODGE, *Bull. Battle Creek Sanit.*, Oct., 1931.

Climate and Female Sex Functions

INVESTIGATION has shown that the maximum conception rate is always found when the mean monthly temperature is around 60°F.

In Northern climates fertility is greatest up to 25 years of age; in Southern climates it is lower in early married life but is more sustained, so that the total productivity is greater.

In America there is a tendency to greater sex gland activity at increasingly earlier ages. The Indian level of 12 to 13 years for menstruation is being approached by the mixed immigrant population. Also there is a tendency to the peak of fertility in women at an increasingly earlier age.—DR. C. A. MILLS, of Cincinnati, in *Ohio St. M. J.*, Dec., 1931.

The Clinical Significance of Low Basal Metabolism

THE increased clinical use of the determination of basal metabolism makes imperative a critical attitude in its interpretation as a diagnostic aid. It must be kept in mind that undernutrition and inactivity tend to depress the basal metabolism and that certain apparently normal individuals have the basal metabolism below normal limits, according to the standards and procedure in common clinical use.—DR. C. A. MCKINLAY, in *Minn. Med.*, Aug., 1931.

Positive Tuberculin Tests

IT IS among those who, fortunately or unfortunately, have passed through childhood and the first years of youth without contracting a benign tuberculosis infection that one finds an appalling morbidity from tuberculosis when they are exposed to infection. In other words, a positive tuberculin test in a healthy individual is a sign of immunity.—DR. A. E. CHADWICK, New Brighton, Pa., in *Am. Med.*, Dec., 1931.

The Marriage of Syphilitics

TO be considered cured, a syphilitic patient must satisfy the following conditions:

1.—To have been treated at the beginning of the syphilitic infection, in the primary or secondary period.

2.—To have been subjected to sufficiently intensive treatment.

3.—To have responded favorably to the medication.

When these conditions are entirely satisfied, a syphilitic person can be considered cured and it is safe for him to propagate, but not otherwise. There may occur favorable cases, but generally my answer is in the negative.—DR. A. GALLIOT, of Paris, France, in *J. Chemotherapy*, Jan., 1932.

Cardiac Pain

CARDIAC pain is a symptom referable directly to the coronary arteries.

In essential hypertension, particularly of the malignant type, cardiac pain frequently occurs. Numerous theories have been advanced to explain the origin of hypertensive heart pain. That here the coronary arteries are at fault is without question. In the presence of hypertension, one can scarcely ever be overcautious in suspecting cardiac origin of any chest pain which is accentuated by physical exertion.—Drs. H. A. Freund and W. B. Cooksey, in *J. Michigan S. M. S.*, Oct., 1931.

Urologic Problems in Childhood

CHILDREN are susceptible to the same urologic diseases as adults, excepting diseases of the prostate and carcinoma of the bladder. Cystoscopes of the catheterizing type, with a 10 V. caliber, are as accurately designed as the larger instruments used in the adult. Their employment in a host of cases has demonstrated their practicability. Complete urologic investigations are done, including bladder examination, ureteral catheterization, renal function tests and pyelography.—Dr. A. Sprenger, Peoria, Ill., in *Southern M. J.*, Feb., 1932.

Psychologic Aspects of Deformities

MUCH harm has come in the past through failure on the part of the medical profession to recognize the psychologic aspect of deformities, especially facial deformities. Physicians have too often been unaware of the serious handicaps imposed upon these individuals, not merely by physical appearances, but more especially by mental reactions which affect their personalities, social status and means of livelihood.—Dr. C. L. Straith, of Detroit, in *J. Michigan St.* M. S., Jan., 1932.

Gonorrheal Vulvovaginitis

THE examination of 32 women who, as children, had been treated in the Johns Hopkins Hospital for gonorrheal vaginitis, corroborated the contention that gonorrheal vulvovaginitis in young girls has few sequelae in adult life. In particular, it seems to negate the assertion that the disease contributes toward sterility.—Dr. P. Dooley, of Kent, Conn., in *Am. J. Dis. Child.*, Nov., 1931.

Posture and Metabolism

IMPROPER posture, owing to its pressure effects on the heart and vessels, interferes with blood supply and oxidation in the lungs and disturbs metabolism.—Dr. J. R. Garner, of Atlanta, in *Internat. J. Med. & Surg.*, Oct., 1931.

The Septic Uterus as a Factor in Rheumatism

THE girl who gives a history of "whites" in adolescence is very likely to become the woman who will probably have trouble in labor, or may develop pelvic ill-health or quite probably some form of rheumatism. There is an association between septic uterus resulting from an ascending infection, uterine ill-health, unsatisfactory labors and rheumatism.—Dr. Muriel Keyes, *in Practitioner*, (Lond.), Nov., 1931.

Allergic Migraine in Children

ALTHOUGH migraine is a syndrome common in children, few physicians associate it with allergy. A conservative estimate of the number of children under 12 years old in the U. S. who have migraine is 1,000,000. The symptomatic history is usually periodic headaches, nausea and cyclic vomiting. Treatment consists of thorough elimination of the predisposing factors and a careful investigation and removal from the diet of the foods to which the child is specifically sensitive. For migraine, this treatment is as satisfactory as for other allergic diseases.—Drs. R. M. Balyeat and H. J. Rinkel, of Oklahoma City, in *Am. J. Dis. Child.*, Nov., 1931.

Rectal Hemorrhage and Pruritus Ani

IN most cases of rectal bleeding and congestion and also of pruritus ani, the astringent action of silver nitrate, combined with the vasoconstrictive action of Stryphnon, will very often give prompt and permanent relief. The anal canal or rectal mucosa is touched with a 2½ percent solution of silver nitrate (gradually increased to 5 percent) two or three times weekly. Subsequent to this, the patient receives a Stryphnon astringent suppository after the morning stool and another before retiring at night. Stryphnon is synthetic methylaminoacetoorthodioxybenzol.—Dr. M. S. Shaine, of New York, in *M. J. & Record*, Sept. 16, 1931.

NEW BOOKS

A well-selected book may be a tool by which a man can improve his skill as a worker.—LITTLE JOURNAL FOR PEDIATRISTS.

Doll, Phelps and Melcher: Mental Deficiency Due to Birth Injuries

MENTAL DEFICIENCY DUE TO BIRTH INJURIES. *By Edgar A. Doll, Ph.D., Director of Research, The Training School at Vineland; Winthrop M. Phelps, M.D., Professor of Orthopedic Surgery, Yale University School of Medicine; Consultant on Birth Injuries, The Training School at Vineland; and Ruth Taylor Melcher, M.A., Research Assistant, The Training School at Vineland. New York: The Macmillan Company.* 1932. *Price* $4.50.

This study is chiefly concerned with those children who, because of birth trauma (especially, infantile cerebral palsies), suffer both motor paralysis and mental retardation.

It has generally been accepted that children with dyskinesia due to birth injury were for the most part feeble-minded; that any treatment looking toward mental improvement in such children was more or less useless, owing to their motor difficulties and lack of cooperation. A few observers have, however, believed that some such handicapped children were mentally normal behind the mask of dyskinesia and that they could profit by muscle training.

The present work is devoted to recording what has been accomplished at the Training School, at Vineland, N. J., in improvement of speech and movement, and thus in the expression of intelligence, in a number of such cases. The attempt has frankly been of an experimental nature and a pioneer endeavor; very detailed studies of twelve such cases are given, from the physical, neurologic and psychologic viewpoints.

To neurologists, psychiatrists and others interested in mental deficiency and retardation, this work opens up a new viewpoint, inasmuch as birth injuries may be a fruitful source of such conditions. Comparatively little attention has been given to this aspect in professional publications.

The major problems investigated have been: (a) to describe the consequences of birth injury as related to mental deficiency and motor handicap; (b) to develop more exact methods of mental measurement of birth-injured mentally deficient subjects; (c) to evaluate the mental and physical benefits which may be expected from physical therapy, especially motor reeducation; and (d) to formulate some of the theoretic implications suggested by this condition.

Lewis: Heart Disease

DISEASE OF THE HEART. Described for Practitioners and Students. *By Sir Thomas Lewis, C.B.E., F.R.S., M.D., D.Sc., LL.D., F.R.C.P., Hon. D.Sc. (Michigan), Physician in Charge of Department of Clinical Research, University College Hospital, London; Physician of the Staff of the Medical Research Council; Physician in Chief (Pro Tem.) Peter Bent Brigham Hospital, Boston, etc. New York: The Macmillan Company.* 1933. *Price,* $3.50.

This clinical outline of diseases of the heart is based on the author's experiences of more than twenty years as a teacher and clinician. Emphasis has been put upon physical facts and symptoms and their interpretation, without the unnecessary use of laboratory and mechanical apparatus and procedures. In this respect the following quotation is pertinent: "A chief reform needed in medical education today is that students should be encouraged to take a more leisurely and intelligent interest in phenomena, not of the laboratory, with which they will soon lose all connection, but of everyday practice." Definite and original ideas about the classification of heart disease are presented and adhered to as among the sound reasons for publication of the book. It is recommended to all students and to all practitioners who want a work that covers heart disease in a thoroughgoing manner.

Blacker: Human Values in Psychological Medicine

HUMAN VALUES IN PSYCHOLOGICAL MEDICINE. *By C. P. Blacker, M.C., M.A., M.D., M.R.C.P. London: Humphrey Milford, Oxford University Press.* 1933. *Price* $2.50.

The author's views are avowedly deeply influenced by the Freudian philosophy. The main argument which runs through his pages is that the science of medical psychology, having been much advanced in the past

thirty years by the study of the generic characteristics of mental disorder, would now be much further advanced if attention were turned to the personal characteristics and idiosyncrasies of individual sufferers.

A secondary aim is to associate the principles of psychologic medicine to those of general biology.

The ten chapters making up the volume are mainly concerned with different aspects of the two foregoing viewpoints.

The book is not for light reading. Indeed, to follow the author's complex reasoning and compressed synthesis of psychologic concepts will require all the attention and special faculties of one well versed in the by-paths of mental science. Each chapter presents a number of true essays—not mere statements of concrete or abstract facts, but rather views that may or may not be accepted by the reader, according to his bias or knowledge, and which form the groundwork for much reflection, extension and discussion.

Besides being of interest to psychologists the monograph is recommended to all who like to think.

Sherman: Chemistry of Food and Nutrition

CHEMISTRY OF FOOD AND NUTRITION. *By Henry C. Sherman, Ph.D., Sc.D., Mitchill Professor of Chemistry, Columbia University. Fourth Edition, Rewritten and Enlarged. New York: The Macmillan Company.* 1932. *Price* $3.00.

Great strides have been made during the past six years in our knowledge of nutrition. Dr. Sherman's third edition of "Chemistry of Food and Nutrition" was published in 1926. This edition, the fourth, in improved appearance and binding, has been brought up to date, including the value of iron supplemented with copper in anemias and newer knowledge of other metals in their relation to nutrition, together with other additions which cannot be noted in this brief review. Fish oils and fish-liver oils, recently investigated for their vitamin potencies, have been referred to. Dr. Sherman, however, neglects halibut-liver oil, which has came on the market under the trade name "Haliver Oil," and which can be taken in drops instead of teaspoonfuls.

A bibliography at the end of each chapter is of value to those who wish to do further study on any subject.

New data is appended in tables giving: (1) Protein, fat, carbohydrates, fuel value, and caloric value of many foods, from almonds to zwieback; (2) calcium, magnesium, potassium, sodium, phosphorus, chlorine, sulphur and iron percentage of foods; (3) protein, calcium, phosphorus and iron, in grams per 100 calories of food material; (4) foods as sources of vitamins A, B, C and G.

The new volume comes in improved appearance and binding.

This book is of value to all those who are interested in nutrition and who wish to keep abreast of newer scientific developments related to it.

F. J. H.

Surgical Clinics

SURGICAL CLINICS OF NORTH AMERICA. *Pacific Coast Number. Volume 13, Number 1, February* 1933. *Philadelphia and London: W. B. Saunders Company. Issued serially, one number every month. Per clinic year, February,* 1933 *to December,* 1933. *Prices: Paper* $12*; cloth,* $16 *net.*

The February, 1933, number of the "Surgical Clinics of North America" consists of papers contributed by twenty-four of the leading surgeons of Washington, Oregon and California. The authors are all fellows of the Pacific Coast Surgical Association. A total of forty-one subjects are presented, all of general interest to the surgeon and practitioner. Some of the contributions of special interest are: "The Use of Bacteriophage in Urinary Infections" and "Prostatectomy in a Hemophiliac," by Dr. Frank Hinman; "Choledochoduodenostomy: A Modified Technic," by Drs. J. Tate Mason and Joel W. Baker; "Osteochondroma of the Ilium," by Dr. Wayland A. Morrison; and "Two Cases of X-ray Diagnosis of Probable Malignant Disease of Stomach, While Operation Revealed that Filling Defects Were Due to Pressure External to the Stomach," by Dr. Park Weed Willis.

This volume adheres to the usual excellence of typography and binding.

Hollos: Tuberculosis Intoxications

SECRET PLACES OF TUBERCULOSIS. *By Joseph Hollos, M.D., New York City. Cleveland, Ohio: "The New American,"* 1932. *(May be obtained from the author, 53 East 87th Street, New York City. Price* 50c.)

In this small, paper-bound book, Dr. Hollos has attempted to set forth some of his interesting ideas regarding tuberculous intoxications (as distinguished from active infections), as these affect the endocrine and other organs and produce many obscure maladies. He also tells of his difficulties in getting his ideas before the American medical profession and something about Spengler's immune blood. A number of case reports are included.

For the physician, his larger book, "Tuberculous Intoxications," which was reviewed in our pages a year or two ago, is better than

this, but there is "human interest" material here that might supplement the other.

In view of the awakening interest in the use of tuberculin, in cases which are not frankly tuberculous, the work of Dr. Hollos assumes increasing importance.

Stern: Clinical Diagnosis

CLINICAL DIAGNOSIS: Physical and Differential. *By Neuton S. Stern, A.B., M.D., (Harvard). Associate Professor of Medicine, University of Tennessee School of Medicine, Memphis. New York: The Macmillan Company,* 1933. *Price,* $3.50.

This book, the outgrowth of eleven years' teaching of medicine, has been written to fill the needs of students as they are learning to make diagnoses. The material is presented in a very usable way, so that it will be readily grasped. Part III is especially praiseworthy, in that it gives a simple and straightforward discussion of the necessary steps in making a diagnosis. A series of twenty-one case reports is given, for diagnostic practice. Part IV, devoted to the significance of symptoms and signs, discusses the usual ones met with, presenting their various causes. The student who does not use this book as a text will find it excellent for reference study.

Ellis: Micro-Dynamics

MICRO-DYNAMICS; New Science in Diagnosis and Treatment. *By F. C. Ellis, B. Sc., (E.E.), Associate American Institute of Electrical Engineers; Director of Ellis Research Laboratories, Inc. Chicago: Ellis Research Laboratories, Inc., 400 N. Michigan Ave.,* 1933. *Price* $1.00

The most advanced scientists now declare that everything in the universe is a manifestation of electricity. J. E. R. McDonagh announces that there is only one disease—electro-chemical unbalance—and the men who are working along his lines are enthusiastic. Ellis believes that it is possible, with an apparatus called a "Micro-dynameter," to measure, in an objective way, the electric potential or "vitality index" of the living human body and to ascertain (also objectively) the approximate location of disease processes. The kind and degree of the body's polarity can also be measured.

Since the potential of the body is very minute, Ellis recommends treatment with electric currents far less strong than those now in common use (microamperes instead of milliamperes), and individually adapted to the capacity and polarity of every patient so treated.

Ellis's work has been closely correlated with that of McDonagh, and in this book these correspondences are briefly discussed and the logical reasons for the uses of this apparatus, for both diagnosis and treatment, are set forth simply and clearly. The scientific background of the argument is decidedly impressive and convincing.

The author, not being a physician, is very modest with his clinical suggestions, merely quoting what doctors who have used the apparatus have told him.

Those who are hospitable to really new (even revolutionary) ideas, will find this inexpensive little book (which is cheap only in price) remarkably stimulating, or even exciting. Those who are timid about doing real thinking had better let it alone.

Worcester and McComb: Psycho-Spiritual Healing

BODY, MIND AND SPIRIT. *By Elwood Worcester, M.A., Ph.D. (Leipsic), D.D. (University of Penn. and Columbia University), and Samuel McComb, M.A. (Oxford University), D.D. (Glasgow University). New York and London: Charles Scribner's Sons.* 1932. *Price* $2.50.

The distinguished founders of the "Emmanuel Movement," about which much was heard a decade or two ago, have had sufficient experience to command a respectful hearing, even if one does not agree with them at all points.

A study of this book shows them to be sound, sane and very human thinkers, and the first eight chapters, embodying the technic of their methods of psychotherapy, with illuminating clinical reports, deserves a place in the library of every physician, because the information there presented can be used daily in any medical practice. Their plea for a thorough preoperative psychic study and treatment of every surgical case which is not an acute emergency is worthy of consideration by every surgeon.

The last five chapters deal with what is more strictly *spiritual* healing and anyone who, without personal experience of these matters, would classify such methods as ridiculous, would be in the same category with those who, knowing nothing of the results of the use of diathermy and x-rays, would declare that the things reported by men who are familiar with the use of these agencies are the vaporings of crazy men and cannot happen. Here we have the reports of men who have successfully used the methods they describe in hundreds of cases and *know* what they are talking about.

Any unbiased physician or intelligent and open-minded layman can gain much direct and personal, as well as professional, profit

from a careful study of these sincere and well-presented reports of the work of two remarkable men.

Medical Clinics

MEDICAL CLINICS OF NORTH AMERICA. Boston Number. Volume 16, No. 4, January, 1933. *Philadelphia and London: W. B. Saunders Company. Issued serially, one number every other month. Per clinic year, July, 1932, to May, 1933. Price: Paper* $12; *cloth* $16.

The January, 1933, number of the Medical Clinics of North America consists of papers contributed by staff members of various Boston hospitals and the Harvard Medical School. The papers are all of so much clinical importance that it is hardly apropos to single out any certain ones for consideration. Some of the more important ones for the practitioner, however, are:

1.—Three Cases of Chronic Dietary Deficiency, in which the author says: "The borderline states of nutritional insufficiency need better recognition."

2.—Peripheral Complications of Ulcerative Colitis, with attention to dietary deficiency.

3.—Diagnosis and Treatment of the Several Types of Goiter.

4.—Diabetic Coma, with thorough clinical and laboratory studies and a plea for greater endeavor to prevent it.

5.—Sub-acute Bacterial Endocarditis.

6.—Nitroglycerin Collapse — A Potential Danger in Therapy.

7.—The Treatment of Diabetes, with presentation of one case treated with insulin and one without.

8.—The Differential Diagnosis of Acute Arthritis.

9.—Plasma Protein Deficiency with Cardiac Edema.

10.—The Treatment of Cardiac Asthma.

11.—Agranulocytic Angina, treated with pentnucleotide.

In all, the number contains 21 articles and is of great practical value.

Cousins: Irish Poetry

A WANDERING HARP: Selected Poems. *By James H. Cousins. New York: Roerich Museum Press.* 1932. *Price* $3.00.

An Irishman, by birth and upbringing, Cousins, who is an artist in many lines, has been a world-wanderer for years and has seen the fineness and beauty of many lands. This volume is a sheaf of his reactions to what he has felt as he journeyed seeking that beauty, but through it all one senses the lure and the mystery of Erin, whose sons and daughters are ever, in their hearts, close to the "old sod." Whether it be a dramatic-historical poem of Conn, the High King of Ireland in A.D. 125, a lyric written in a Swiss garden or a vision of the Taj Mahal, it is ever an Irishman who sings: and those who feel the call of the shamrock and the peat fires will find deep pleasure here.

Landman: Sterilization

HUMAN STERILIZATION. The History of the Sexual Sterilization Movement. *By J. H. Landman, Ph.D., J.D., J.S.D., The College of the City of New York. New York: The Macmillan Company.* 1932. *Price,* $3.50.

This book deals with the process of human sterilization as a means of restricting the multiplication of our socially inadequate people in society. Part I treats of the relationship between eugenics and American social legislation. Part II deals with the attitude of our courts toward human sterilization legislation. Part III explains the biologic and eugenic bases of the program for compulsory human sterilization. Part IV describes the surgery of human sterilization. Part V treats the problem of formulating a social policy for dealing with our cacogenic people, based on our present eugenic knowledge. The book is not designed as propaganda, either for or against the program of human sterilization. It is a scholarly and scientific treatment of the available data on the subject. The conclusions are not final, but suggestive. The work is authoritative and will meet with the approval of all persons interested in the social and legal phases of human sterilization.

Von Noorden: Diabetes

NEUZEITLICHE DIABETESFRAGEN: Funktionelle Pathologie und Therapie. *By Prof. Dr. Carl von Noorden. Berlin and Vienna; Urban and Schwarzenberg.* 1933. *Price* $.60.

This small pamphlet by one of the most renowned authorities on metabolic diseases, is an enlarged postgraduate lecture which the author delivered in Berlin in December, 1932.

The little, handy booklet presents a scientific and practical review of the problems of the diverse forms of diabetes, the nature of which is clearly elucidated. The various dietetic methods and insulin therapy are treated in a critical manner. Professor von Noorden actually gives us the benefit of his tremendous experience—the last word on all the problems of diabetes.

G. M. B.

MEDICAL NEWS

(c) Keystone-Underwood

New Home of Pasteur Institute

This is a picture of the new building now housing the famous Pasteur Institute, which was recently opened with appropriate ceremonies.

Send for your copy of "Serums and Vaccines." Your patients need this information.

Association of Private Hospitals

THERE are in the United States 6,000 hospitals with 100 beds or less, most of which are privately owned institutions. Some of these maintain high standards of professional service; others do not.

In an effort to raise the status of the private hospitals in this country, the Association of Private Hospitals, Inc., has been formed and has started the publication of a sightly little journal called *Private Hospitals*, which bids fair to be interesting and valuable to those connected with such institutions. Any superintendent of a private hospital may have a copy of this magazine and further information about the Association by writing to Oscar R. Gottfried, Executive Secretary, 256 Fifth Ave., New York City.

CLINICAL MEDICINE AND SURGERY is the best journal I take. I could not do without it.—DR. S. G. P., Colo.

Opening in Illinois

INFORMATION has been received that there is an opening for a physician in an Illinois town of 3,500 population, where there is a hospital and three other doctors. Full information may be obtained by writing to C. A. Steinmeyer, 494 West Side, Carlinville, Ill.

The Zifferblatt Hay-Fever Treatment

A PHILADELPHIA newspaper announced a new "Inhalant Immunizing" method of treating hay-fever, by Dr. A. H. Zifferblatt (a dentist) of that city. Investigation has disclosed the following facts: That Dr. Zifferblatt and his associates claim to have developed inhalant treatment for hay-fever that will give permanent relief for the season; that no information regarding this treatment has been published in medical literature, but the widest publicity has been given it through the daily press; that the composition of the drugs used and the methods of administering them are admittedly secret; that at least a proportion of the public is being charged for this secret treatment, which is admittedly in the experimental stage.—*Editorial*, in *J.A.M.A.*, July 16, 1932.

Look for THE LEISURE HOUR among the advertising pages at the back.

Graduate Study of Metabolic Disorders

THE 1933 Graduate Fortnight of the New York Academy of Medicine will be devoted to a study of metabolic disorders and associated endocrinologic problems. Many prominent men will present papers and clinics and lead round-table discussions. There will also be an illustrative exhibit.

A complete program and registration blank may be obtained from Dr. F. P. Reynolds, 2 East 103rd St., New York City.

I need your help—no medical journal like C. M. & S.—J. A. H., M.D., Tennessee.

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